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Young Adults and Vaping: Explaining the Factors that Influence Vaping Behaviour Among Undergraduate Students in Perak

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Abstract

Vaping is an act of inhaling and exhaling the aerosol, often referred to as vapour, produced by electronic cigarettes or similar devices. Even though it may mimic smoking, vaping is claimed to be less harmful as e-cigarettes do not burn tobacco and tar, which are also the main components of tobacco cigarettes. The way e-cigarettes are promoted not only made the devices popular, but the efforts to regulate the selling of the devices also become challenging. This research was conducted to explore factors that influence vaping behaviour among young adults, and data was collected through in-depth and one-to-one interview with 10 undergraduate students from Universiti Tunku Abdul Rahman (UTAR), Perak. Thematic analysis was performed with the aid of Atlas.ti, and the findings showed that vaping behaviour varied depending on factors such as categories of vapers, purposes of vaping, and the influence from others. The vapers who participated in this study were grouped into two categories, which are current users and former users. For the first category, they comprised of single and dual users, whereas for the second category, they refer to vapers who quit vaping and returned to smoking. There are five sub-themes to explain the purposes of vaping namely quit smoking, healthier option, cheaper option, curiosity and earn money. The sub-themes for influence from others include friends, family and the media.

Keywords: E-cigarettes, Vaping Behaviour, Young Adults, Purposes of Vaping, Healthier Option

Introduction

E-cigarettes are not new. The devices had been in the market for more than 10 years and tremendously expanded in terms of its technology and features. The earliest types of e-cigarettes include cigalikes, e-Gos and Mod, and not too long after that, pod vapes with smaller size and almost smokeless were introduced. The innovation of vaping devices made them more attractive to wide range of consumers, regardless of their age. With the endless options of e-cigarette juices and flavours, the devices continue to become popular among the non-targeted audience such as non-smokers and teenagers. This is supported by the statistic reported by Market Analysis Report (2024), whereby in 2023, the global e-cigarette and vape market was valued at \$28.17 billion, and it is anticipated to expand at a compound annual growth rate (CAGR) of 30.6% from 2023 to 2030. The data shows that the global e-cigarette industry will continue to grow in the future.

In Malaysia, the data obtained from a vape industry study performed by Malaysian Vape Chamber of Commerce (MVCC) indicates a significant growth in both the retail value of Malaysia's vape market and the number of vape users between 2019 and 2023. The retail



value of the vape market increased from RM2.27 billion in 2019 to RM3.48 billion in 2023. This marks a growth of at least 53%, suggesting a strong market expansion and possibly increased spending per user or a greater variety of products in the market. In addition to that, the number of vape users rose by approximately 27%, going from 1.1 million in 2019 to 1.4 million in 2022 (Malaysian Vape Chamber of Commerce, 2023). This growth suggests an increasing acceptance and popularity of vaping products among consumers during this period.

The objective of this study is to understand about the factors that influence vaping behaviour among young adults, whom the statistics showed that vaping among this group have increased from 4.5% in 2021 to 6.1% in 2022. According to Monitoring the Future, as cited in Truth Initiative (2024), in 2022, the age group with the highest e-cigarette use among adults was the 23- to 24-year-olds, with 22.8% of them being current users. In another data, e-cigarettes were reported as the most commonly used tobacco products among middle and high school students in the United States, with 5.9% compared to only 1.4% for traditional cigarettes (U.S. Food and Drug, 2024). It is important to look into the ways the young people consume e-cigarettes before any initiatives towards promoting public health and safety can be put into action.

Literature Review

Vapes are often compared to tobacco cigarettes. Unlike tobacco cigarettes that contain dried and processed tobacco leaves along with hundreds of other additives, e-cigarettes use a liquid solution called e-liquid or vape juice, which typically composed of flavourings, propylene glycol, variable percentage of nicotine, and/or vegetable glycerine (Hahn et al., 2014). Because of the different compositions between these smoking tools, e-cigarettes are often claimed to be safer to people's health as the toxic chemicals produced when the devices are heated are lesser than the tobacco cigarettes that release at least 69 chemicals that are known to cause cancer when burned (American Lung Association, 2024).

However, ever since e-cigarettes were introduced into the market as an alternative device for tobacco cigarettes, research on the effects of vaping on health have been persistent. Marques, Piqueras and Sanz (2021) wrote that the heating process used in vaping can produce new decomposition compounds that might be harmful. Certain compounds formed from humectants, specifically propylene glycol and glycerol, as well as flavorings, have been linked to effects on the respiratory system, causing inflammation, impairing cardiovascular function, and exhibiting toxicity.

Furthermore, e-cigarette vaping is also associated with a health condition known as e-cigarette or vaping product use-associated lung injury (EVALI), which the first case was officially identified in the US in 2019 and the number of cases that increased sharply from August 2019 to September 2019 have forced Centers for Disease Control and Prevention (CDC) and Food and Drug Administration (FDA) to closely monitor the situations (Rebuli et al., 2023). Until 18 February 2020, a total of 2,087 cases of EVALI with 68 deaths were reported to CDC, and the laboratory data suggested a strong link between vitamin E acetate and the outbreak of EVALI in the country (Ministry of Health Malaysia, 2021). Other than that, the content of nicotine in e-cigarettes can cause addiction. The finding of an e-cigarette study by



Jankowski et al. (2019) showed that the nicotine dependence level were over two times higher among exclusive e-cigarette users compared to traditional tobacco smokers. Likewise, the level of nicotine dependence in dual users was greater when using e-cigarettes compared to traditional cigarettes. The study concluded that the elevated nicotine dependence seen among young adult e-cigarette users indicates that this group may be at a high risk of addiction compared to the smokers.

Therefore, the claim that e-cigarettes being completely safe and harmless need to be revised. Vaping may cause lesser harm than smoking, but it does pose certain risks for people. What is more problematic is that the way e-cigarettes are promoted have attracted children to try. The variety of flavours and bright coloured packaging have lured adolescents to buy (Meehan et al., 2024). According to a study by Landry et al. (2019), flavour was a common reason for vaping initiation among US adults, and fruit flavours were more likely to motivate young adults aged 18-24 years to vape. A similar result can be seen in a study by Farsalinos et al. (2023), whereby a total of 82.8% of participants aged 18 and above reported fruit flavours to be their choice at the beginning of vaping.

Yusoff et al. (2023) mentioned that the prevalence of e-cigarette use among teenagers in Malaysia has significantly increased in the past five years. Similar trend can be seen in German, where e-cigarette use among adolescents aged 14-17 years were reported to have increased from 8.3% in 2018 to 13.4% by 2020 (Gali et al., 2022). According to data that was obtain from the Action on Smoking and Health Smokefree Great Britain Youth Survey, as of 2024, there are around 980,000 children aged 11-17 years in Great Britain have tried vaping. These youths also reported to that they were exposed to some form of vape promotion, with shops being the main sources (59%) followed by online (29%) (Action on Smoking and Health, 2024).

Methodology

A qualitative method was employed to gather data about the factors that influence vaping among young adults in Malaysia. The researcher had conducted in-depth interview with 10 undergraduate students, aged 21 until 25, who were pursuing their studies in a private university located in Kampar, Perak. Three criteria were set in the selection of samples, which are young adults aged 18 – 25 years old, Malaysians, and e-cigarette users. Thematic analysis was performed for data analysis, whereby the interview data was first transcribed, then followed by generation of codes and themes using Atlas.ti.

Tables and Figures

The study was participated by 10 students who were pursuing their degree at Universiti Tunku Abdul Rahman (UTAR), Perak. All of them were e-cigarette users and had the vaping experience of more than six months. In terms of gender, one participant was female and the other nine were male. In addition, this study was participated by one Malay, four Chinese, and five Indian students, who came from different states including Selangor, Kelantan, Perak, and Pahang.



The table below shows their demographic information, smoking experience and categories.

Table 1: Demographic of Informants

Informants	Gender	Smoking Experience	Categories
Informant 1	Male	No	Current user
Informant 2	Male	Yes	Current user
Informant 3	Female	Yes	Former user
Informant 4	Male	No	Current user
Informant 5	Male	Yes	Former user
Informant 6	Male	Yes	Current user
Informant 7	Male	Yes	Current user
Informant 8	Male	Yes	Current user
Informant 9	Male	Yes	Current user
Informant 10	Male	Yes	Current user

Based on the table above, there were two informants who were considered as former user. Both started with smoking tobacco cigarettes, then decided to vape, before turned back to become smokers. At the time of the interview, they also have quit vaping. Other eight informants were current user. They can further be grouped into single user and dual user. For single user, two of them never tried smoking tobacco cigarettes, and another two have completely quit smoking after some times of using pod vapes. In the case of dual user, they usually smoked both depending on factors like with whom they hanged out, where they hanged out, and the ease of use.

Table 2: Themes on the Factors that Influence Vaping Behaviour among Young Adults

Themes	Sub-themes	Explanations
Purposes of Vaping	Quit Smoking	This is where the informants initiated e-cigarette use because they wanted to quit smoking. Realising that to cease smoking was never easy, Informant 7 said, “(I vape) because I wanted to stop smoking actually, but I don’t know how to stop because it’s hard. You know everytime I want to stop, then actually the final (exam) will be coming and then we’ll have, you know, presentation, automatically when you have all this kind of thing, it’s like eventually you’ll find ‘Eh, let me get the cigarette’, you know”.
	Healthier Option	Some informants were heavy smokers. They acknowledged the negative consequences of smoking,



		therefore considered vaping as an alternative that could protect their health. Informant 8 said, “I’ll say it’s much more of <i>err</i>, I feel like it’s more of a healthy option. Because there is no tar in it and stuffs like that”. Informant 10 said, “Because I thought smoking cause a lot of injuries, so my friends recommend using vapes. So, I start using e-cigarette and then I bought myself one”.
	Cheaper Option	Smoking informants were looking for an option that is more pocket friendly. Informant 2 said, “So basically, in the beginning, I used e-cigarette because the normal cigarette is too expensive, last time”. Informant 7 said, “Because one thing I would say it’s (smoking) a bit expensive nowadays...it’s like considered expensive a bit nowadays”.
	Curiosity	Referring to the curiosity to taste e-cigarettes and to play with the smoke. Informant 2 said, “I am curious why normal cigarette does not have so much smoke, but e-cigarette got so much smoke. So, curiosity to try and the flavour also. The smell. The smell from e-cigarette”. Informant 4 said, “Because that time you can see a lot of people are vaping and you’ll feel like ‘Oi! There’s a lot of people vaping’, so I would like to join them,



		vape and also the fresh as what I said. Something new and you would like to try. That's the reason make us continue (to) vape".
	Earn Money	Two of the informants involved with vape business. Therefore in this case, vaping is not only for self-enjoyment, but also a way for them to earn money. Informant 1 said, “(The main reason I vaped is) because of business”. He also stressed that he would not stop vaping because he wanted to continue earn money.
Influence from Others	Friends	It is common for university students to receive influence from their friends. Some informants said that they vaped because they saw their friends were vaping, and others said that they received encouragement from their close friends who thought that vaping is better than smoking. In addition to that, there was an informant who mentioned that he vaped because it is important to join the crowd. Informant 5 told that he was trying his friend's e-cigarette at a <i>mamak</i> restaurant and was convinced that it is better than tobacco cigarette, “Aaa first using e-cigarette, I was in mamak shop, he (my friend) gave me his e-cigarette, he told me why don't you try this because it has flavours and it is more safe compared to that (tobacco cigarettes) because has very less chemicals”. Informant 2 believed that to be in sync with friends is important, “Influenced by other people using (e-cigarettes). My friends around me.



		Back in my hometown and in Kampar also. Because sometimes you see everyone is smoking vape, and when you come out with normal cigarette, they will see like you are not joining them. If you are not joining them, so they are not happy, so we just keep our social balance. When you (are) happy, everyone is happy then okay. You join the crowd”.
	Family	There are two opposite findings with regards to family reactions. First, rejection. And second is approval. These reactions affect their vaping behaviour when they are with their family members. For Informant 8, the bad happening caused by smoking made any form of smoking tool banned in his family. He said, “(My family) are absolutely against the idea of smoking because I had like uncles, like two uncles who passed away because of lung cancer. Yah (<i>died</i>) because of smoking. So ever since that like my grandmother came up with this ban that nobody in the family should smoke. So since I am a rebel against that, so I just decided you know what, I just don’t smoke (and vape) at home”. Informant 9 had more supportive family members, “Err thank God my dad is quite open minded. So when I told my dad...because I don’t like my parents to know anything behind my back. I don’t like people coming and telling them, so I told them first. So my dad was okay (with me vaping)”.
	Media	These young adults were heavily exposed to the Internet and social media. They utilised these media for various vaping-related activities,



		such as to receive updates and latest e-cigarette news, to communicate with fellow vapers, to learn about e-cigarette functions and systems, as well as to purchase their vape products. Informant 1 said that he did not follow any vape-related forums online, but he joined some community groups on Facebook that are related to selling and buying vapes. Informant 3 and Informant 4 shared similar experience in following Instagram accounts that show vaping tricks. Informant 8 said, “For me, its (following vape shops on social media) not to buy things from them, but basically just to keep updated to like what new system has come out, and <i>yah</i>, the stuffs like that”.
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Discussion and Conclusion

The purposes of vaping and influence that the young adults received from others further influence their vaping behaviour. It further determined their choice of devices, choice of e-juice types and flavours, frequency of vaping, and the restrictions imposed when vaping. Generally, the two types of e-cigarettes that are widely sold in Malaysia are mod and pod e-cigarettes. The latter type of e-cigarettes was proven to have the capability to deliver more nicotine at a faster rate than any other types, primarily due to having a high concentration of nicotine in its pods (Anderton, 2019). This finding explains the reason behind the preference of some informants who were also categorized as heavy smokers towards pod-based vapes.

Informants who were non-smokers also tend to prefer fruity flavoured e-juices, whereas those who smoked mostly favour the creamy flavours. They described fruit e-juices as having sweet taste, whereas cream e-juices have thicker taste that usually stay at the throat even after hours of vaping. This finding is consistent with a study by Krüsemann et al. (2021) whereby the sweet flavours were disliked by adult smokers, and among young adult non-smokers, their main preferences are menthol/mint and sweet flavors like vanilla or chocolate as well as candy.



In terms of vaping frequency, most of them used their e-cigarettes daily. Interestingly for dual smokers, they may alternate between vaping and smoking depending on situations, for example, when they ran out of e-juices, or left their devices at home, then they would easily switch to tobacco cigarettes. In fact, they cited convenience as one of the reasons that they still continue smoking. Tobacco cigarettes do not require maintenance the way e-cigarettes do and can be purchased at any shops anytime the smoker needs it, hence considered as more convenient. They also tend to use e-cigarettes more when they were at public places that restrict smoking or in air-conditioned room. Apart from the increasing price of tobacco cigarettes, Ofuchi, Zaw and Theptien (2020) also cited restrictions of smoking in public places as a factor involved in increasing the prevalence of e-cigarette use.

In conclusion, the increasing prevalence of vaping among young adults is a multifaceted issue influenced by a variety of factors including marketing strategies, perceived health benefits over traditional smoking, peer and family influence, and the appeal of flavored e-liquids. Despite the perception that vaping is a safer alternative to smoking, it poses its own set of health risks, which are still being studied and understood. The rise in vaping has led to concerns about nicotine addiction and its potential gateway effect to other substances. Public health initiatives and policy makers need to address these misconceptions through targeted education and awareness programs, promoting informed decision-making among young adults. By understanding their vaping behaviour, the efforts towards reducing the prevalence of vaping and its associated health implications in this demographic will be more effective.

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Effect Of Amil Fund From Zakat, Amil Fund From Infaq And Size Of Amil To The Performance Of Amil Zakat

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Abstract

This is the first study to our knowledge analyzes the effect of effect of amil fund from zakat, amil fund from infaq and size of amil to the performance of amil zakat. Using data from 11 Community based Amil Zakat in national level (LAZ) in 13 years period from 2010 to 2022, we find that amil fund from zakat has effect to positive performance of amil zakat, amil fund from infaq has positive effect to performance of amil zakat and size of amil to has positive effect to the performance of amil zakat. Our novelties Find that Amil fund from zakat and amil fund from infaq has positive effect on performance of amil zakat, and amil fund from zakat has greater effect to performance of amil zakat than the effect of amil fund from infaq to the performance of amil zakat.

Keywords: amil fund from zakat, amil fund from infaq, size of amil and performance of amil zakat.

Introduction

Attention regarding zakat began to grow after the 1998 reform era, accompanying the growing concern about Islamic economics. Meanwhile, zakat institutions before 1998 had not been formally formed, mostly only in the form of temporary committees in mosques with a greater focus on zakat fitrah. Apart from that, social institutions that manage community aid funds have begun to grow, such as Dompot Duafa in 1994 (www.dompetduafa.org) and other amil zakat infaq and shodaqoh institutions which have begun to grow in various regions. In the New Order era, the existence of Islamic economics was very limited, which was institutionally seen with the emergence of the first Islamic bank with the name Bank Muamalat in 2001 (OJK). Meanwhile, the second sharia bank emerged in 1998 with the support of the legal basis of Law no. 10/1998 concerning Amendments to Law no. 7 1992 concerning banking. In regulating the institution and management of infaq shodaqoh zakat, Law Number 38 of 1999 concerning zakat management emerged. With this legal basis, various other zakat infaq and shodaqoh institutions emerged, such as LAZISMU in 2002 (www.lazismu.org) and other zakat infaq and shodaqoh institutions. In 2011 the government issued Law no. 23 of 2011 concerning zakat management which replaced Law no. 10 of 1998.

The implementation of Law No. 23 of 2011 is strengthened by the existence of government regulation No. 14 of 2014 concerning the implementation of Law No. 23 of 2011 concerning zakat management and Instruction of the President of the Republic of Indonesia No. 03 of 2011 concerning the optimization of zakat collection within the government. Law No. 23 of 2011 confirms that zakat management is managed by two groups of institutions, the Amil Zakat Agency (BAZ) and the Amil Zakat Institution (LAZ). One of the important points in strengthening zakat management is regarding the accountability of zakat management. As an



institution that carries out the mandate of the Indonesian Muslim community, accountability is needed to gain the community's trust that BAZ and LAZ are worthy of carrying out this mandate. Nurhasanah and Binamadani (2017) emphasized that to gain the trust of muzakki, zakat amil institutions must report the zakat they manage to the community.

Amil Zakat's accountability can be seen in the financial reports provided or published by Amil Zakat. The financial report contains important points that zakat stakeholders need to know. However, not all stakeholders are able to read well or understand what is presented in financial reports. For example, the amount of zakat collection is presented well in the financial report. Likewise, the distribution of amil or the amil portion of the zakat collected. However, the relationship between the two cannot be read directly in the financial statements. Special research is needed to see this relationship. Muhtadi and Susilowati (2018), Risanda et al (2018) and Hizazi et al (2018) have seen that the distribution of amil funds or amil shares has a positive influence on the performance of amil zakat. However, their research has not yet looked at the influence of each part of amil such as the amil part of zakat and the amil part of infaq on the performance of amil zakat. This research will look at the influence of the amil portion of zakat and the amil portion of infaq on the performance of amil jugat. Furthermore, this research will also look at the optimal amil fund rates in improving the performance of amil zakat.

From the background explained previously, it is interesting to carry out research regarding 1) Does Amil Fund from Zakat affect the performance of the Zakat amil? 2) Does Amil Fund from Infaq affect the performance of amil zakat? 3) Does the effect of the Amil Fund from Infaq to the Performance of amil zakat greater than the effect of the Amil Fund from Zakat to the Performance of amil zakat?

This research Novelty looks in detail at the relationship between amil funds and the financial performance of amil zakat. What is the relationship between the amil part of zakat and the financial performance of zakat amil and the relationship between the amil part of infaq and the financial performance of zakat amil. We Find that Amil fund from zakat and amil fund from infaq has positive effect on performance of amil zakat, and amil fund from zakat has greater effect to performance of amil zakat than the effect of amil fund from infaq on performance of amil zakat. Research on the performance of amil zakat was previously conducted by Muhtadi and Susilowati (2018); Hizazi et al. (2022) with OLS regression. And Hizazi et al (2023) looked at the simultaneous relationship between amil funds and amil zakat performance. Meanwhile, Wahab and Rahim (2013) carried out efficiency measurements and Tobit regression was carried out by Al-Parisi (2017).

Literature Review And Hypothesis Development

Literature Review

a. Islamic corporate governance, Manajer (Amil) and Organizational Performance

It's fascinating to observe how managers affect organizational performance in both the public and private sectors. (Brudney et al., 2001; Nicholson-Crotty and O'Toole, 2004; Buck et al., 2008). Managers have a key role in the direct and indirect management of organizational resources that will enhance organizational performance. Organizational performance will be



affected by changes in management. According to Hill (2005), manager turnover initially will have a detrimental effect on performance if managers are hired from outside the firm, but over time, it will have a favorable impact.

Islamic corporate governance isn't supposed to oversee and regulate Islamic financial organizations in the same way that it used to. In fact, the intense competition, the failures of the Islamic finance sector that have been noted, the unheard-of difficulties, and the necessary ethical considerations call for a new strategy that will improve organizational performance, ensure its survival in the unhindered competitive environment. It is imperative that Amil Zakat apply Islamic corporate governance which are equipped with a comprehensive and innovative effort to enhance its collection and align with best business practices

On the other hand, organizational performance will be impacted by the strategy that managers choose (Boyne and Walker, 2004; Cheon and An, 2016). Even while past strategies do not greatly influence performance, organizations that do poorly are more likely to adopt the posture of defender than prospective. Network impact on performance has been discussed in other studies (Meier and O'Toole 2003). A sample of Amil Zakat institutions, where management utilize the term Amil, is used in this study.

b. Performance of Zakat Institutions

Performance measurement is a critical component to understand For an institution success. Due to the existence of performance indicators that are not held by non-commercial institutions, such as earnings and stock returns (Kaplan 2001), commercial institutions have a very good way of articulating this. This has led to the majority of prior research in zakat institutions adopting the Data Enveloping Analysis approach, which was created by Farel in 1957, to quantify efficiency. While Muhtadi and Susilowati (2018) use regression to test efficiency, another study (Risanda et al., 2018) uses a measure of the production function with stochastic frontier analysis (SFA) based on the Cobb Douglas production function with zakat receipts and distribution as the dependent variable.

The proportion of inputs to outputs generated by zakat institutions is used as the performance variable with efficiency. The following performance metrics have been employed in earlier research: Distribution efficiency has been studied by Muhtadi and Susilowati (2018), Al-Ayubi et al. (2018), Rustyani & Rosyidi (2018), technical efficiency has been studied by Risanda et al. (2018), Al-Ayubi et al. (2018), and productivity measures have been studied by Rustyani & Rosyidi (2018).

The quantity of input and output variables employed demonstrates the range of efficiency metrics applied in earlier studies. The selection of this variable may be based primarily on user desire. However, due to methodological restrictions, Muhtadi and Susilowati (2018) only used 20 observations, and Risanda et al (2018) only used 15 observations, whose results might be biased, Muhtadi and Susilowati (2018) also conducted a regression test with the dependent variables Zakat Collection and efficiency. However, the results were not satisfactory. Hizazi et al. (2022) discovered that Amil funds had a favorable impact on



performance using the total collection of Zakat, Infaq, and shodawoh as a performance metric.

c. Amil funds and organizational performance

The initial reference for performance research is made to literacy in commercial organizations or companies due to the dearth of research that examines the relationship between amil funds and organizational performance.

According to Jensen and Murphy's (1990) research, executives who get management incentives are more likely to make decisions that are in the best interests of shareholders. In contrast, Tosi et al. (2000) found in a meta-analysis of executive wage research that salary was a variable that was employed in all assessed studies to enhance organizational performance. Muhtadi & Susilowati (2018) demonstrated in a study of amil zakat that amil funds had a favorable impact on amil zakat. With further samples and observations, Hizazi et al. (2022) support this conclusion that amil finances influence amil zakat performance.

d. Size of Amil Zakat

According to Watt and Zimmermann's political cost theory from 1978, huge corporations are the focus of regulation. Greater material and human resources will be available to the organization as it grows. According to this viewpoint, a company's performance improves with size. Lee (2009) and Pervan and Visic (20120) demonstrate that business size and performance are positively correlated. This firm size suggests that a company's ability to make more money is correlated with the size of its assets. The ability to manage resources to boost business performance increases with the size of the company. The size of the corporation can be determined by total asset and how many branches it owns. However, using the quantity of branches to indicate the size of the business is not yet a standard practice. The presence of more branches indicates that the business and the firm are expanding.

e. Previous Research

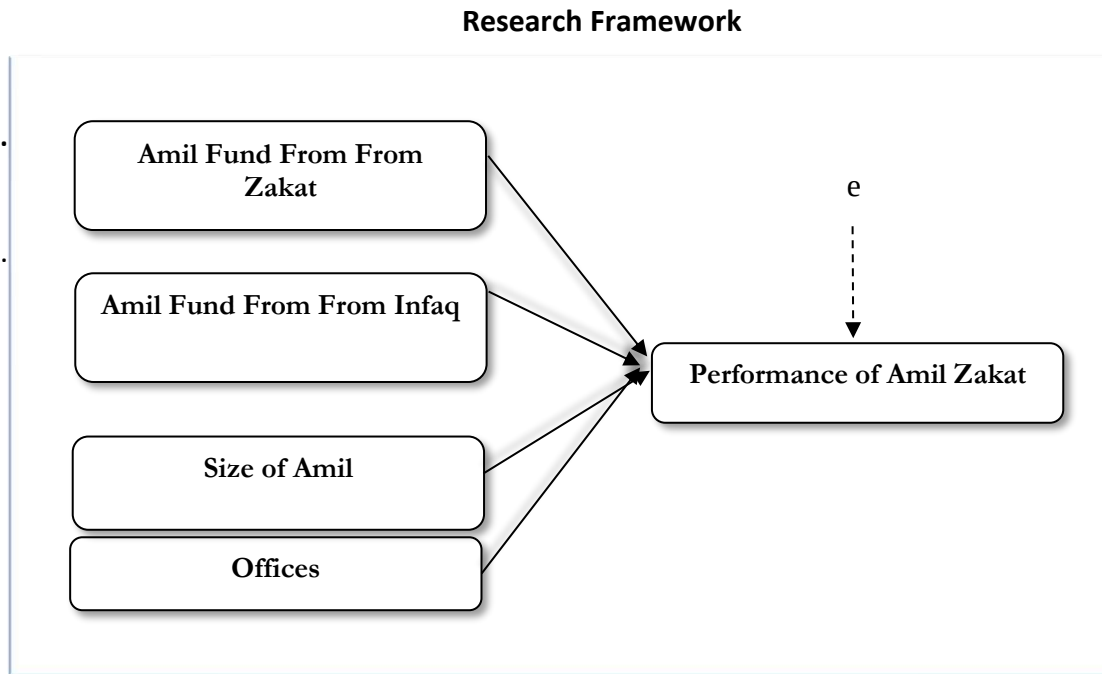
Performance measures from previous research are Zakat Distribution, Zakat Collection, , Total Assets Zakat Recipient and Zakat Collection efficiency (Ahmad & Main, 2014; Muhtadi & Susilowati, 2018; Al-Ayubi & Possumah, 2018; Rustyani & Rosyidi 2018; Risanda et. al., 2018). These measures can explain the extent of the zakat institution's efforts to gather as much zakat as they can. The quantity of infaq received is an additional option because, unlike zakat, infaq is voluntary rather than reflecting duties that must be met. The more the infaq value, the more the people will trust zakat organizations. While the difference in zakat distribution is greatly influenced by the volume of zakat collected. Muhtadi and Susilowati (2018) and Hizazi et al. (2022) conducted earlier studies using OLS regression. Al-Parisi (2017) used Tobit regression to measure the efficacy of Wahab and Rahim (2013) before them.

f. Research Framework and Model

According to Rustyani and Rosyidi (2018), the number of expenses incurred and the money Amil Zakat receives will have an impact on how the funds are distributed. While the distribution of funds will be determined by the amount of Zakat collected by UPZ, the amount of operational expenditures and the amount paid by the amil will also have an impact on the

amount of Zakat collected. Al-Ayubi et al. (2018) included the quantity of volunteers and the quantity of offices to the list of variables affecting UPZ output in addition to these two. The framework and model of this study are depicted in the image below:

Figure 1.



Amil Zakat Performance Model

The basic model for measuring LAZ performance (Hizazi et al 2021) is as follows:

$$\text{Performance}_{it} = \beta_0 + \beta_1 \text{AmilFund}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Offices}_{it} + e \quad (1)$$

Where :

Performance = Performance Measure, as measured by the total all Amil Institution Collections.

β_0 = Constant

Amil Fund = Distibuted or used of Amil funds measured by amil distribution data

Size = Amil Institution size, measured by total asset

offices = Number of Offices , measured by the the number of branch offices, service units and centers

i = crosssection/institution i

t = time t

e = error

The current models of the factors that affect of LAZ performance on amil funds is as follows:

$$\text{Performance}_{it} = \beta_0 + \beta_1 \text{AmilFZ}_{it} + \beta_2 \text{AmilFI}_{it} + \beta_3 \text{Size}_{it} + \beta_4 \text{Offices}_{it} + e \quad (2)$$



Where :

Performance = Performance Measure, as measured by the total all Amil Institution Collections.

β_0 = Constant

AmilFZ = CollectedAmil funds From Zakat

AmilFI = CollectedAmil funds From Infaq

Size = Amil Institution size, measured by total asset

offices = Number of Offices , measured by the the number of branch offices, service units and centers

i = crossection/institution i

t = time t

e = error

Research Hypothesis

Based on the literature review, previous research as well as the framework and research model above, the hypotheses of this research are as follows:

H1: Amil Fund from zakat has a positive effect to the Performance of Amil Zakat

H2: Amil Fund from Infaq has a positive effect the Performance of Amil Zakat

H3: Amil Fund from Infaq has greater effect than Amil Fund From Zakat on the Performance of Amil Zakat

Methods

This study uses a quantitative method. Using the Focus Group Discussion (FGD) approach, qualitative methods are utilized in the first stage to investigate the elements that influence the performance of the zakat management unit and decide what factors are thought to have an impact on the performance of the zakat management unit.

The parameters to be investigated using the FGD are chosen as a starting point based on the factors that have been employed in prior studies. The FGD was carried out by modeling the collection and distribution of zakat while highlighting the variables that affect this process. In order to explore as many potential influences on UPZ's performance as feasible, the FGD also featured mindmapping. It concluded with a structured debate on the creation of performance metrics and their influences. The FGD's findings served as the foundation for developing the performance model. All present BAZ and LAZ provided quantitative data based on FGDs, which served as the foundation for the presentation of qualitative descriptive performance measurements. The second testing phase is completed utilizing quantitative testing using multiple regression. The variables that will be examined in this study are the provision of Total Assets, Number of Amil, Number of Volunteers, Operational Costs and Number of Offices and Total Zakat Collection.

a. Research Data Source

The data used is secondary data in the form of LAZ financial reports available at BAZNAS and each LAZ from 2010 to 2022.



b. Subject/ Research Location

The subjects/locations of the research are BAZNAS and LAZ by looking at the general operational similarities and the same basic management. Focus on Quantitative Testing at the national level LAZ using 12 data from 2010-2022.

c. Research Model

The basic model for measuring LAZ performance is as follows:

$$\text{Performance}_{it} = \beta_0 + \beta_1 \text{AmilFund} + \beta_2 \text{Size}_{it} + \beta_3 \text{Office}_{it} + e \quad (1)$$

We Break amil fund from infaq in the model into specific infaq variable restricted Infaq and unrestricted Infaq.

$$\text{Performance}_{it} = \beta_0 + \beta_1 \text{AmilFZ}_{it} + \beta_2 \text{AmilFI} + \beta_3 \text{Size}_{it} + \beta_4 \text{Offices}_{it} + e \quad (2)$$

Where :

Performance = Performance Measure, as measured by the total all Amil Institution Collections.

β_0 = Constant

Amil FZ = Amil Fund form Zakat measured by Distibuted of Amil funds from Zakat

Amil FI = Amil Fund from Infaq measured by Distibuted of Amil funds from Infaq

Size = Size ofAmil Zakat, measured by total asset

Offices = Number of Offices , measured by the the number of branch offices, service units and centers

i = crossection/institution i

t = time t

e = error

d. Operational Variables

Our Variables are measured in following ways :

Performance of Amil Zakat (dependend Variable)	Measured by the total of all Fund Collected. Performance = Zakat Fund + Infaq Fund + Waqf +APBN +
Amil FZ	Amil Fund form Zakat measured by Distibuted of Amil funds from Zakat
Amil FI	Amil Fund form Infaq measured by Distibuted of Amil funds from Infaq
Size	Size ofAmil Zakat, measured by total asset



Offices	Measured by Number of Offices/Branches
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e. Analysis Method

Then quantitatively regression testing is carried out using Ordinary least square. The estimations run-in one-time execution using E-views 8.

Results And Discussions

a. Research Samples

In Indonesia, there are 37 authorized Amil Zakat Institution in National Scale, 33 Amil Zakat Institution in Provincial Level and 70 Amil Zakat in Municipality level according to Indonesia (Religious Ministry, 2023). Our research uses data from Amil Zakat in National Level due to greater fund collected and the complete data availability. Amil Zakat in Provincial and Municipality level has lesser data available in their website.

No	Criteria	Sample	obs
1	Authorized National LAZ	37	85
2	Not publish financial report in internet		(27)
3	Incomplete data		(5)
4	Observations	11	73

Table 2. Research Sample

From 37 Amil Zakat population in National level we used 11 amil zakat as our samples based on couples criteria, such as availability of the data in internet and completeness of the data , see table 2. There are 85 observations from 12 sample but 1 sample Yakesma doesn't have complete data required by our models. Finally, only 11 samples selected with 73 observations are available for our model.

b. Statistic descriptive

Our Statistic descriptive listed in thousands of rupiah for our model as follow:

Table 3. Statistic Descriptive				
	Mean	Maximum	Minimum	Std. Dev.
Performance	96,896,366	436,000,000	18,653,044	89,238,781
Amil Fund	11,398,506	7,299,911	50,949,016	1,629,805
Amil Fund from Zakat	4,935,678	27,773,029	608,616	6,602,718
Amil Fund from Infaq	8,402,501	28,687,907	1,123,369	7,550,930
Asset	29,461,437	126,000,000	4,293,035	24,710,310

Performance is total fund collected by amil zakat. Amil is Amil Fund Amilz is Amil fund from zakat, amili is amil fund from Infaq and asset is total asset, all variables measured in thousands of rupiah.

Observations: 73

c. Normality and Correlation tests

Normality test for our model using Jarque berra which require its Probability score greater than 0.5. our normality test shows that Jarque Berra score is 1.758890 and probability score is 0.415013 that conclude that our model has normal distribution of data.



Table 4. Correlation

Correlation	Performance	AMIL	Amilz	Amili	Asset
Performance	1 -----				
Amil	0.889253 0.0000	1.000000 -----			
Amilz	0.916772 0	0.769991 0.0000	1 -----		
Amili	0.80218 0	0.640601 0.0000	0.674587 0	1 -----	
Asset	0.423423 0.0002	0.453249 0.0001	0.196132 0.0963	0.477291 0	1 -----

Performance is total fund collected by amal zakat. Amil is Amil Fund Amilz is Amil fund from zakat, amili is amal fund from Infaq and asset is total asset, all variables measured in thousands of rupiah.

Observations: 73

We use correlation tables to check whetr our model has Multi Correlation between its independence variables. Table 4 shows that only Amil Fund (Amil) and Amil Fund From Zakat (amilz) that have correlation greater than 0,7 because Amil Fund from zakat is part from Amil Zakat. But we don't use Amil Fund in our primary model.

d. Results

Following A Risanda et al. (2018) and Hizazi et al. (2021) we check whether Amil Zakat has effect to Performance of Amil Zakat using greater number of observations. Ours result show consistent output that Amil Fund has positive effect to Performance of amal zakat. Thus, in our primary model we use Amil Fund from zakat and and amal Fund from Infaq replacing amal fund to become our independent variables.

$$\text{Performanceit} = \beta_0 + \beta_1 \text{AmilFundZakatit} + \beta_2 \text{AmilFundInfaq} + \beta_3 \text{Sizeit} + \beta_4 \text{Officesit}$$

Variable	Coefficient	Coefficient
C	17.214202 (0)	17.14249 0
AMILZ	6.45E-08 *** (0)	6.15E-08 *** 0
AMILI	3.32E-08 *** (0)	3.25E-08 *** 0
Size	9.51E-09 *** (0)	9.06E-09 *** 0
Offices	-0.00065 (0.6951)	



Adj R2	0.881034	0.868923
F-statistic	134.3042	138.0011
Prob(F-statistic)	0	0
observations:	73	63

Lag independent variables

Performance is total fund collected by amil zakat. Amil is Amil Fund Amilz is Amil fund from zakat, amili is amil fund from Infaq and asset is total asset, all variables measured in thousands of rupiah.

Our model uses 2 types of data, in first columns using same periodic data using 73 observations and second column using lag of independent variable which are reduced to 63 observations only. Performance in this model is financial performance of amil zakat measured by total fund collected by amil zakat that consists of zakat, Infaq, Shodaqah, Waqaf, non halal and others sources of fund. Amilz is amil fund from zakat, allocation of zakat distributed to amil to support its operations. Amili is amil fund from infaq, allocation of infaq distributed to amil to support its operations. Size is size of amil zakat measured by total asset, offices is number office or branches of amil zakat. Office is number of main office and branches owned by amil zakat. Result shows in first column that AMILZ has significant effect on Performance with coefficient score 6.45E-08 with probability score 0 below 0,01 limit confirmed our first hypotheses. AMILI also has significant effect on Performance with coefficient score 3.32E -08 with probability score 0 below 0,01 limit confirmed our second hypotheses. But, coefficient score of AMILZ 6.45E-08 larger than AMILI score 3.32E -08 against our third hypotheses. We also run our basic model, the result consisten with our result and also support A Hizazi et. All. (2021). This support the roggorous of our second model.

e. Discussion

Effect of amil fund from zakat to the performance of amil zakat

Zakat is main source of fund collected by amil zakat which is compulsory by syariah. However, submitting zakat to amil zakat is voluntary making collecting zakat from muzakki a challenging task. Amil fund from zakat is regulated by BAZNAS at maximum rate 12.5 % of zakat collected. Normally amil zakat take amil zakat near maximum limit. Result show that coefficient result of amil fund from zakat to performance is 6.45E-08 with probability below 0,01. This result means that amil zakat could optimize amil fund from zakat to support their operation to collect fund from muzakki this is consistent to Risanda et. al., (2018), Hizazi et al (2021), Hizazi et al (2022) that amil fund has positive effect to performance of amil zakat. Amil fund allocated from zakat has no restriction on purpose of fund to spend. Amil zakat may spend on salary of amil or other operational expenses to maximize the collection of funds.

Effect of Amil Fund from Infaq to the performance of amil zakat

Other source of amil fund is Infaq. Infaq has voluntary nature according to syariah which provide other challenge to amil to provide program which may attract donors/muzakki to fund their programs. Some of infaq require amil to follow allocation of fund related to certain programs or follow requisition of donors to certain purpose, however there are infaq that put no restriction to any amil zakat's program. This make infaq come under two categories: restricted infaq and unrestricted infaq. BAZNAS regulation regarding amil fund from zakat



from Infaq limits maximum allocation to 20% of collected infaq, either restricted or unrestricted infaq. It seems that amil may gain more from infaq than from zakat.

Our estimation results show that coefficient of amil fund from infaq is $3.32E-08$ with probability less than 0.01 %. This also means that amil zakat could optimize the amil fund from infaq to fund their operations and other supports to maximize their collection of funds. However, with the average amount of amil fund from infaq at 8,402,501,000, - which is larger than average amount amil fund from zakat at 4,935,678,000, - we expect that amil fund from infaq could have greater impact than amil fund from zakat. But the results show vice versa this might occur due to some restriction of some of infaq which limit creativity of amil zakat. Amil fund from zakat has greater effect to performance of amil zakat than the effect of amil fund from infaq on performance of amil zakat. This means that amil zakat put more weight on zakat than infaq to continuously push the performance of amil zakat

Effect of size of amil zakat to the performance of amil zakat

Greater size of amil zakat shows the greater power of amil on size of programs and greater coverage on reaching their donors. Greater amil zakat may cover all province in Indonesia such as rumah zakat and Dompot Duafa, but some amil zakat only cover few provinces like. With greater coverage amil zakat's may interact with more donors which eventually collect more funds.

Our results show that size of amil has coefficient scores at $9.51E-09$ with probability less than 0.01 which mean the bigger amil zakat will have the higher performances of amil zakat. The bigger size of amil zakat provide amil zakat with bigger capabilities to do more in providing more programs and more services. This is consistent with Hizazi et al (2021) that show amil fund has positive effect on performance of amil zakat.

Effect of number of offices to the performance of amil zakat

Number of offices of amil zakat reflects more programs and more coverage of amil zakat. However, our results that number of offices don't have effect on performance of amil zakat. This happened probably due to less variability of number of offices in samples data.

Conclusions

Based on previous explanations, we conclude that 1) Amil fund from zakat has positive effect on performance of amil zakat. This means amil funds from zakat could push amil zakat to collect more funds from public. 2) Amil fund from Infaq has positive effect on performance of amil zakat. This means that amil fund from infaq also make amil more motivated to provide more service and programs to attract fore funds. 3). amil fund from zakat has greater effect to performance of amil zakat than the effect of amil fund from infaq on performance of amil zakat.

This research implication means that amil zakat could put more weight on collecting fund from zakat than from infaq to push the performance of amil zakat. Fund from zakat provides more continuous availability due to obligative nature of fund.



We recommend to add the contribution of volunteers as a factor that may increase the performance of amil zakat for future researches. Considering wider environment of amil zakat may make future researches have bigger point of views.

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Accounting Treatment For Managed Assets Based On Psak No 101 And No 109 (2017) And Perbazznas No 5 (2018)

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Abstract

This paper analyzes accounting treatment and presentation of managed assets ^b Amil Zakat based on PSAK #101 and #109 (2017) and PERBAZNAS # 5 (2018)¹⁾ and their practical presentation by Central BAZNAS and 10 Authorized National Zakat Agency (LAZ). We use a qualitative analysis that describes the practical impact of this regulation on accounting records and reporting. Our results showed that the presentation of financial assets in the statement of financial position and the statement of changes in funds based on PSAK 101 and 109 the year 2017 were still un-informative. The presentation of managed assets indicates that presentation is mistakenly classified in the statement of financial position and the statement of changes in funds. The emergence of PERBAZNAS No. 5 the year 2018, which lists the managed assets in the statement of financial position, has not been able to increase the informativeness of amil zakat's financial statements regarding the managed assets. We proposed a new presentation of managed assets in the statement of financial position and statement of changes in funds to increase the informativeness of amil zakat's financial reports. Keywords: Managed Assets, PSAK no 101, no 109 (2017), PERBAZNAS no 5 (2018), Informativeness.

Introduction

We study the accounting of managed assets in Amil zakat [2] (BAZNAS and LAZ) PSAK no. 101 and 109 the year 2017 and PERBAZNAS NO 5 the Year 2018 and their practice in Central BAZNAS and 10 LAZ (national zakat agency) in Indonesia. We find that practical presentations of managed assets in financial reports are less informative. Therefore, we propose a new presentation of the managed assets in the financial reports.

The first release of PSAK 101 and 109 was in 2010. Since then, there were no significant updates in its updated guidance. PSAK no. 101, the year 2017, concerns the presentation of the financial report of Syariah institution, while PSAK no. 109, the year 2017, provides guidance related to accounting zakat. In practice, we find that presentation of managed assets based on PSAK 101 and 109 was less informative because it is not presented in the statement of financial position. However, Central BAZNAS, which most LAZ follows, presents managed assets under the classification of non-current assets below fixed assets. It is an odd practice since managed assets also contain fixed assets.

On the other hand, amil zakat has an intermediary role in receiving cash and non-cash asset and distributing them to beneficiaries. Amil zakat is not the owner of assets; therefore, all

¹ PSAK stands for *Penyataan Standar Akuntansi Keuangan*, Indonesian's Financial Accounting standard) and PERBAZNAS stands for *Peraturan Badan Amil Zakat Nasional*, regulation that is released by BAZNAS (National Zakat Body).



non-cash assets are managed assets. Accordingly, listing managed assets under non-current assets is not curing the un-informativeness of managed assets.

The other problem displayed in the statement of Financial position are funds such as zakat funds and infaq funds. Funds represent cash or cash equivalent balances. But in all guidance and regulation whether PSAK 101, 109 year 2017 or PERBAZNAS no 5 year 2018, funds not only represent cash equivalent but also non-current Assets. Obviously, these applied by BAZNAS and all LAZ in all issued statement of financial position, since 2010. Thus, stakeholders received Misleading information of funds in the statement of financial position provided by amil zakat.

We analyzed all these problems raised by imprecise guidance in PSAK 101 and 109 the year 2017 and in PERBAZNAS No 5 the year 2018. However, published accounting standards are usually also based on practice in the field. Therefore, the new zakat accounting standard was issued for the first time in 2009 SAK No. 109 (IAI, 2009) following other institutions that have been emerging and developing for a more extended period, such as Islamic banking SAK No. 59 in 2002, and presentation of sharia financial statements in 2007. However, extant practices are not always best practices. That is why when PERBAZNAS No 5 the year 2018 emerged; It does not improve the informativeness of amil zakat's financial statements.

Accounting is a business language that delivers a message from entities to their stakeholders. The transferred messages should be defined in a term perceived as similar both from entities as transferrers and stakeholders as receivers. To be in that same perceptions, guidance, and regulation should be more precise and accurate. In that Way, an accounting message composed following clearer guidance (PSAK and PERBAZNAS) would be informative, accurate, and relevant. Accordingly, we propose a new alternative of presentations of statements of financial position and the statement of changes in funds through the improvement in definitions of zakat and classification and practical aspects.

Literature Review

Amil Zakat - terms, functions, ethics and rights.

The Amil zakat proliferated after the reform era, following its openness in adopting an increasingly open community religious spirit. To underlie the legal strength of this amil zakat body, the government issued the first law that regulates zakat management, namely Law NUMBER 38 the YEAR 1999 concerning zakat management. This law regulates that amil zakat is an institution formed by the government. However, this law was declared invalid after issuing Law Number 23 the year 2011 concerning Zakat Management.

In its development, number of amil zakat grows rapidly in two form namely BAZNAS (Badan Amil zakat Nasional) and LAZ (Lembaga amil zakat). BAZNAS was formed by the government and has semi-autonomy characteristics in its activity. BAZNAS exists in every province and municipality in Indonesia and is controlled by Central BAZNAS. At the same time, LAZ was formed and managed by non-governmental institutions, which the government also recognizes. In 2011 according to the Director-General of Taxes Regulation Number PER-33 / PJ / 2011, there were 20 institutions at the national level recognized by the Director-General of Taxes to receive zakat and donations. Of these 20 institutions, one is a government-run



institution, namely the National Amazon Zakat Agency (BAZNAS) with regional derivatives, 18 are non-governmental organizations in the form of Muslim LAZ or LAZIS, and 1 is a Christian institution, namely the Indonesian Christian Religious Donations Institute (LEMSAKTI). Implementation in the LAZ and LAZIS fields is also coordinated by BAZNAS. In 2019 the Ministry of Religion (KEMENAG) had given official permission to 24 national-scale Amil Zakat Institutions (LAZ) as a whole.

The Term of Amil Zakat

إِنَّمَا الصَّدَقَتُ لِلْفُقَرَاءِ وَالْمَسْكِينِ وَالْعَمِلِينَ عَلَيْهَا وَالْمَوْلَقَةِ قُلُوبُهُمْ وَفِي الرِّقَابِ وَالْغَرَمِينَ وَفِي سَبِيلِ اللَّهِ وَأَبْنِ السَّبِيلِ فَرِيضَةً مِّنَ اللَّهِ وَاللَّهُ عَلِيمٌ حَكِيمٌ

Meaning: Truly zakat is only for the poor, poor people, amil zakat, people whose hearts are softened (converts), to (liberate) the sahaya servants, to (free) people who owe, to the way of Allah and for those who are on the way (who require help), as an obligation from God. Allah is All-Knowing the Most Wise.

In the language of the word amil zakat comes from Arabic, 'âmil which means: people who take care of the affairs of others, both assets, property rights, and work. (Ibn Manzûr, 4: 145). Related to the phrase al-'âmilîn 'alaihâ al-râghib al-asfhâni said it implies people assigned to alms. (Al-Asfahâni, 360). Al-Thâhir Ibn 'âsyûr mentions some of the meanings of the word al-'âmilîn' alaihâ, including: people assigned by the Prophet or Caliph for the affairs of zakat. (Ibn 'âsyûr, 236).

Referring to the description of these experts, it can be said that the amil zakat is a person or group of people who are employed or assigned by the party responsible for the management of zakat and alms. Another important thing is noted related to the word al-'amilin contained in the verse that the word begins with particles "al" which contains the meaning of all types contained in the genus. Thus the meaning contained in the word al-'amilin includes all people or all groups of people involved in managing zakat, both those who are tasked with gathering, calculating, recording, maintaining or distributing.

Hadith of the Prophet Muhammad, Also emphasized that Amil is a person who is employed or assigned. In the hadith narrated by Abu Daud, for example, the Messenger of Allah. Calling Amil as an assigned person, "Who we are assigned to do a job, then we have given wages for the work so what he takes after that is the act of khianat". (Abû Dâud, 134). Even though this hadith does not speak specifically about people who are employed or assigned as amil zakat, but he gives a general way about how an officer should carry out his duties. Kaedah in general, a person assigned to a job, whatever his work is not allowed to take anything (wages or gifts) from his duties or work, outside that has been set for him.

Meanwhile, according to fikhi experts such as Sayid Sâbiq defined Amil Zakat as people assigned by the head of state or his deputy to gather zakat from capable people. They are tasked with stamping zakat, maintaining and recording it. (Sayid Sâbiq, 327). Meanwhile, according to Yusuf Al-Qardhawi, Amil Zakat is people who work in zakat institutions, both in charge of collecting zakat, maintaining, calculating, recording and distributing them. Al-



Qardhawi further said that the management of zakat is not the work of individuals, but is a job assigned by the state, where the state oversees and regulates it, appointing officers, and the officers are paid. (Al-Qardhawi, 579). Furthermore, the Indonesian Ulema Council's Fatwa Commission defines 'amil zakat as a person or group of people appointed or approved by the government to take care of zakat. (MUI, 890). From the description above can be noted, first, Amil Zakat is a person or group of people or institutions. Second, appointed or get duty from the government. Second, the duty is to take care of zakat; collect, maintain, calculate, record and distribute it to those who are entitled to receive it.

Position of Amil Zakat

It has been mentioned earlier that 'Amil Zakat is a person or group of people who are assigned or employed to manage zakat. In the time of the Prophet Muhammad. Amil Zakat was assigned directly by the Prophet. The assignment by the Prophet could not be seen as the assignment of the Prophet personally, but he was the head of state in Medina, so that the task of 'amil zakat at that time was the duty of the state. Fikhi experts also argue that the task of 'Amil Zakat is the task given by the state, so that those' amil are entitled to get salaries from the state. Yusuf Al-Qardhawi firmly mentioned that in his book *Fiqhu Al-Zakah* that the task of managing zakat is the duty of the state, and not the task of people per person. (Al-Qardhawi, 579).

In the Zakat Law Number 13 of 2011 Article 5 it is stated that the management of zakat is submitted by the government to the institution formed by the government, in this case the National Amil Zakat Agency (BAZNAS). The people who work in this institution are people who are appointed and dismissed by the President on the proposal of the Minister. (Zakat Law Number 23 of 2011). In addition to Baznas management is also handed over to the Amil Zakat Institute (LAZ). LAZ is a government partner zakat management institution, whose legality according to the law is given by the government through the Ministry of Religion. (Perbarnas Number 5 Year 2018).

Duties And Functions Of Amil Zakat

It has been mentioned earlier that 'amil zakat is tasked with collecting zakat, calculating, maintaining, recording and distributing to those who are entitled to receive it. In detail their duties are:

1. Register anyone mandatory for zakat, what property they must issue zakat, how much it is.
2. Registering people who are entitled to receive zakat; Their number, the level of their needs, and how much sufficient their needs.
3. Collecting or receiving zakat.
4. Calculate and record the collected zakat.
5. Save before it is distributed.
6. Distribute zakat to those who are entitled to receive it. (Al-Qardhawi, 580; MUI Fatwa Commission, 890).

In Law Number 23 of 2011 concerning Management of Zakat it is stated that BAZNAS as the Amil Zakat Board which has the task of the government is an institution authorized to carry out the task of managing zakat nationally. While its function:



1. Plan the collection, distribution and utilization of zakat.
2. Carry out the collection, distribution, and utilization of zakat.
3. Controlling the collection, distribution and utilization of zakat.
4. Report and account for the implementation of zakat management. (Zakat Law Number 23 of 2011).

Provisions that Bind Amil Zakat

It has been mentioned earlier in the explanation of the hadith of the Prophet Muhammad. that zakat officers are not allowed to take anything outside that have been determined by those who provide zakat management tasks, both in the form of additional wages or prizes. Fikhi scholars argue that the law of law 'Amil Zakat receives wages or prizes outside that have been determined by the party who gives the task. This legal provision is based on the verses of the Qur'an and the Hadith of the Prophet Muhammad. In the Qur'an it is stated, "It is not worthy of a Prophet to mis-approphe (the booty of war). Whoever misappates (them), surely on the Day of Judgment he will come with what he missed. Then, everyone will be given a perfect reply according to what they do and they are not wronged. (Surah Ali 'Imrân/3: 161).

The verse explicitly talks about the booty of war and not about 'zakat. The message of the verse, so that the Prophet Muhammad. And the people do not abuse the booty of war, which is a state property. Management of zakat is also a mandate given to the 'amil zakat, because it is also responsible for managing it with a mandate and not abusing it. In a hadith sourced from Abî Humaid al-Sâ'idi, he said: the Prophet. Hiring someone from the As'ad tribe named Ibn al-Utbiyyah-'amr and Ibn Abi 'Umar said to collect alms (zakat). When he returned, he said: this is for you and this is a gift for me. Then the Prophet. Standing on the pulpit then praising God and says: how could there be someone we sent (when returning) he said, this is your part and this is my part, is it possible when he sat in the father's house and his mother (not an officer) got a gift or not? For the sake of my soul in His hands, he did not take something except on the Day of Judgment he piled on his shoulders. If as soon as being taken is a camel, then he will uncover, if the cow is taken it will groove, if the goat takes it will stack. Then the Prophet. Lifting his arms until we saw the white armpits, then said: O Allah, I really delivered, and he repeated that twice. (HR. Muslim).

The above hadith confirms that 'Amil Zakat is not allowed to abuse the tasks given to him and the assets or money obtained in the form of gifts or illicit gratification for him. This was based on the hard threats in the hadith that later in the hereafter, they were held accountable.

Right of Amil Zakat

'Amil Zakat is a group that is entitled to receive zakat. The zakat that they receive by the Fiqh experts is seen as salaries from the state. Imam Shafi'i calls it a reward in the form of salaries given by the government. (Imam Syâfi'i, 81). Al-Qardhawi calls it an income given from zakat for carrying out zakat management tasks. (Al-Qardhawi, 597).

The amount of wages they receive is in accordance with the workload or tasks assigned to them. (Ibn Qudâmah al-Maqdisi, 98). Most scholars argue that all their salaries are taken from zakat, even though exceeding eight. (Al-Qardhawi, p. 590). Different opinions are required by Imam Shafi'i, where according to him the amount of salary that may be taken from zakat does



not exceed one eighth. If their salaries are more than eight, then taken from other sources, such as the booty of war. (Imam Shafi'i, 81).

In the context of 'amil zakat in Indonesia, the salary of the BAZNAS management according to the Law is paid by the government from the state budget and amil rights. (Zakat Law Number 23 of 2011). While the salary of the LAZ management is paid by the foundation that overshadows LAZ and taken from amil rights.

From the previous description it can be concluded that 'Amil Zakat is a person or group of people or institutions formed by the government or formed by the community and obtain the government's permission to manage zakat. Their duties and functions are only the manager of zakat, infaq and alms and not the owner. In the scope of Baznas the owner of the funds is the government. Whereas in the scope of LAZ the owner of the fund is people who trust the Amil Zakat Institution.

Accounting for Zakat

The development of zakat accounting has been following sharia accounting, as part of the development of sharia accounting when practical aspects of sharia transactions were developing. On another side, zakat for profession emerged as an answer for growing new professions in humanity (Qardhawy; 2007). Historically, sharia accounting is marked by the SAK 59 on sharia banking in 2002 (IAI, 2016). Why sharia banking? Because the first sharia financial institution that emerged in Indonesia was the sharia bank, namely Bank Muamalat. The first version of sharia accounting guidance was PSAK 59, issued as a part of the conventional SAK.

In 2009, sharia accounting standards were complemented by PSAK 107 concerning Ijarah accounting and PSAK 108 concerning sharia accounting transactions. Accounting for Zakat, Infaq and alms followed in 2010 with the issuance of PSAK 109. The last Islamic instrument issued was the Sukuk Accounting which was issued in 2011 and 2014 with PSAK110. In 2016 PSAK 101, PSAK 101, PSAK 102, PSAK 104, PSAK 107, and PSAK 108 were revised. Financial accounting standards 101 and 109 (PSAK no 101 and 109) concerning the accounting for zakat, infaq, and alms were issued to accompany the reporting needs of amil zakat bodies, which have grown a lot nationally. The updated 2017's PSAK no 101 and no 109 were not different from the earlier version from 2009. Accordingly, in the whole last decade, zakat accounting practice referred to the same substance's regulations.

Zakat accounting guidance and regulation

The rules regarding zakat accounting are regulated in Sharia Financial Accounting Standards, contained in PSAK 101 and PSAK 109. In addition, the presentation of zakat financial statements is also regulated in the Regulation of the National Zakat Body (PERBAZNAS) No. 5 of 2018. The following is a description of zakat accounting.

PSAK 101, concerning Presentation of Sharia Financial Statements

This standard contains regulations about the presentation of sharia financial statements, while three points are related to sharia institutions: sharia banking, sharia insurance, and amil zakat. This standard describes the objective, scope, definition, characteristic, and structure of

sharia financial reports. However, details regarding the managed assets of amil zakat and components that can be recognized have not been described in this standard.

PSAK 109 concerning Accounting for Zakat and Infaq / Alms

These standard states the objective, scope, definition, characteristic, recognition, measurement, presentation, and disclosure of zakat, infaq, and alms. However, it does not have the definition of managed assets. This standard only constitutes the disclosure of managed assets that are managed by other parties controlled by amil and controlled by amil zakat itself. If it exists, should be disclosed number and its percentage from all zakat distribution. Other provisions regarding the recording of managed assets are not provided in detail in this standard.

PERBAZNAS No. 5 of 2018 concerning Zakat Financial Management

PERBAZNAS No. 5 of 2018 confirmed BAZNAS practice listing managed assets under non-current asset category, below fixed assets. It also states that allocations of zakat or infaq for managed assets purposes should be declared in the statement of changes in funds. Specific changes related to managed assets appeared in the chart of accounts in its appendix can be seen as follows:

Table 1. Accounts related to Managed Assets in PERBAZNAS No. 5 the year 2018

Code	Level	Accounts
1203	3	Managed fixed assets
1204	3	Accumulated depreciation of managed fixed assets
5108	3	Allocation of the utilization of managed assets - Zakat Fund
5204	3	Allocation of the utilization of managed assets - Infaq Funds / Alms

Other information related to managed assets is not disclosed in this regulation. So, there is no explanation regarding the rules for accounting recording of managed assets.

Research Method

The research method in this paper is qualitative research. The descriptive analysis would be carried out to study or reference subjects and their application (Kriyantono & Rakhmat; 2012). We review guidance and regulation about zakat accounting in PSAK no 101 and 109 the year 2017 and PERBAZNAS no 5 the year 2018, how they imply the informativeness of amil zakat's financial reporting. We also review amil zakat's published financial reporting from central BAZNAS and 10 authorized national zakat agencies (LAZ). We use only central BAZNAS due to relative control of Central BAZNAS to all BAZNAS at province level and municipal level where they followed central BAZNAS in their financial reporting. The selection of 10 authorized national agencies (LAZ) was based on the availability of financial reports published on their websites on the internet. In this zakat research, we analyze the practical informativeness of financial statements ruled by PSAK no 101 and 109 the year 2017 and PERBAZNAS no 5 the year 2018 and how amil zakat (BAZ & LAZ) follow these regulations. Data in amil zakat financial statements either from BAZNAS or LAZ are obtained from the amil zakat websites.

Result

Definition of amil zakat

PSAK 109, the year 2017, does not mention the definition of managed assets, neither does PERBAZNAS no 5 the year 2018. It creates confusion. Is Managed Asset something managed by other parties controlled by Amil or including those managed by amil zakat itself? PSAK 109 only regulate the disclosure of managed asset which are managed by other parties controlled by Amil Zakat or controlled by Amil Zakat. However, amil zakat has an intermediary role in managing entrusted funds or assets from muzakki (donators); consequently, "all non-cash assets are managed assets."

In our opinion, managed assets are tangible non-cash equivalent assets either managed by other parties controlled by amil zakat or managed by amil zakat itself. Managed assets include long-term securities, office supply, inventory, equipment, fixed assets, and other non-current assets. Account receivables and short-term securities are not engulfed in Managed Asset as they come within the fund's category.

Practices In Accounting For Managed Asset

Presentation Of Managed Asset

Managed Assets based on PSAK 101 and 109 the year 2017 Presented separately are not presented in the statement of financial position or the statement in changes of funds. PSAK no 101 determines that amil zakat should provide a statement in changes of managed assets besides both previous reports. The format of the statement of financial position based on PSAK 101 is as follows.

Figure 1: Format of the statement of financial position based on PSAK 101 the year 2010 and updated version 2017.



PENYAJIAN LAPORAN KEUANGAN SYARIAH

Ilustrasi 1

ENTITAS AMIL ABC
LAPORAN POSISI KEUANGAN
Periode 1 Januari s.d. 31 Desember 20X1

ASET		LIABILITAS	
Aset Lancar		Liabilitas Jangka Pendek	
Kas dan setara kas	xxx	Biaya yang masih harus dibayar	xxx
Piutang	xxx	Liabilitas Jangka Panjang	
Surat berharga	xxx	Liabilitas imbalan kerja	xxx
Aset tidak lancar		<i>Jumlah</i>	<i>xxx</i>
Aset tetap	xxx	SALDO DANA	
Akumulasi penyusutan	xxx	Dana zakat	xxx
		Dana infak/sedekah	xxx
		Dana amil	xxx
		<i>Jumlah</i>	<i>xxx</i>
<i>Jumlah Aset</i>	<i>xxx</i>	<i>Jumlah Liabilitas dan Saldo Dana</i>	<i>xxx</i>

This format has not changed since the first release of PSAK 101 the year 2010. However, in practice, since that year, most amil zakat listed managed assets under the non-current asset category below fixed assets. Published reports are seen in table 2.



Table 2: Presentation of managed assets in the published report of the statement of financial position by amil zakat.

Practice:

Amil Entity ABC

The Statement of Financial Position

Per 31 December 20X1

Assets		Liabilities	
Current Assets			
Cash			
Office Supplies			
Non-current Assets		Funds	
Fixed Assets		Zakat Fund	
Acc Depr of FA.		Infaq Fund	
		Amil Fund	
→ Managed Assets	XXX	Total	
Total Assets		Total L & D	

This presentation is problematic due to several reasons. Firstly, managed asset contains Fixed asset such as equipment, vehicle, building. Which are also contained in 'original fixed,' Secondly, the primary task of amil zakat is an intermediary task which transfers cash or non-cash asset from donators to the beneficiary. Accordingly, all assets are managed assets included ones controlled by amil zakat itself. Finally, Funds listed on the right side of the report have the meaning of cash or cash equivalents (OJK). While in table 2. In zakat funds or Infaq Funds, funds may contain a non-cash equivalent value of managed assets. This presentation makes the statement of financial position less relevant and un-informative. Managed assets under category non-current assets should be removed, and the containing items should be joining 'other assets' where they should be. While in the right side, managed assets should be excluded from these funds, either zakat funds or infaq funds, and list them in their item. While the statement of changes in fund (LPD) presentation is as follows:

Table 3: Presentation of the statement of changes in fund.

Information		20X2	20X1
Zakat Fund			
Reception		XXX	XXX
Spending		XXX	XXX
Surplus (deficit)		XXX	XXX
Beginning balance		XXX	XXX
Ending balance		XXX	XXX



Infaq Fund			
Reception		XXX	XXX
Spending		XXX	XXX
Surplus (deficit)		XXX	XXX
Beginning balance		XXX	XXX
Ending balance		XXX	XXX
Dana Amil			
Reception		XXX	XXX
Spending		XXX	XXX
Surplus (deficit)		XXX	XXX
Beginning balance		XXX	XXX
Ending balance		XXX	XXX
Non Halal Funds			
Total Receipts		XXX	XXX
Spending		XXX	XXX
Surplus (deficit)		XXX	XXX
Beginning balance		XXX	XXX
Ending balance		XXX	XXX
Balance Amount		XXX	XXX

PERBAZNAS No 5 was issued in 2018 to improve the accounting of managed assets. Though, it just emphasizes actual practice, which is not adopted in PSAK any 101 and 109 the year 2017. The other underlining improvement in this new regulation is allocating zakat funds or infaq funds for managed assets. It is stated clearly in the distribution of zakat or infaq in the statement of changes in the fund; it is "expense." However, this new rule only displays the already used allocation account for managed asset and add a label for the managed assets. It is an improvement but not giving optimal refinement of its informativeness.

Recording journal entries for receipt and distribution based on SAK 109

The presentation pattern of amil zakat's financial statements in SAK 109 will determine how each transaction of receipt and distribution of zakat will be recorded. The recording of funds receipts is grouped based on zakat, infaq, and other groups. Other groups may include qurban, fidyah, subhat funds, and limited endowments. Recording of funds receipts is carried out as follows:

Table 4: Receipt Records

cash		XXX	
	Receipt of Zakat Profession		XXX
	Receipt of Zakat Maal		XXX
	Receipt of Agricultural Zakat		XXX
	Receipt of Livestock Zakat		XXX
	Receipt of Infaq		XXX
	Receipt of Qurban		XXX



	Receipt of Fidyah		XXX
	Receipt of Subhat Fund		XXX

Zakat allocation records are grouped based on the mustahiq group. Mutahiq is eight beneficiary groups of zakat which are determined by sharia. Mustahiq groups include the needy and poor, converts, fisabilillah, gharimin, ibnu-sabil, Amil, and slaves, And expenses for infaq and other expenses. Other allocations such as Infaq, qurban are recorded in similar patterns. Recording of funds distributions is carried out as follows:

Table 5: Distributions Records

Distribution for the needy and Poor		XXX	
Distribution for Fisabilillah		XXX	
Distribution for Amil		XXX	
Distribution for Mualaf		XXX	
Distribution for gharimin		XXX	
Distribution for Ibn Sabil		XXX	
Infaq Distribution		XXX	
Non-Halal fund distribution		XXX	
Cash			XXX

Recording managed assets

The primary source of funds for managed assets comes from the distribution of amil funds and other sources of funds. Therefore, managed assets can be recorded through natural assets recording or an amil funds distribution account. Apart from distributing amil funds, managed assets can also be obtained from infaq funds. The recording of assets under management from infaq funds is direct. Entries for recording asset.

Table 6: Managed assets Record

Assets		XXX	
Managed assets		XXX	
Cash			XXX

Before the emergence of PERBAZNAS no 5 the year 2018, if entries recording follows PSAK no 101 and 109 2017, it cannot be seen immediately that the asset recording is a managed asset. Statements of changes in managed assets are a separate report prepared after the statement of financial position and the statement of changes in funds. It is complementing report, like the cash flow statement. Because of this separate reporting, the accounting process becomes uneasy in recording and presenting the group of managed assets. However, in practice, managed assets are presented in the statement of financial position in the non-current assets' category, below fixed assets. The value presented in the statement of financial position is the net value of assets under management, and the value will be the same as the value in statements of changes in managed assets. Meanwhile, the zakat or infaq account does not reflect the actual balance in the fund because the number contains managed assets either in the zakat funds or infaq funds. The inflated balances due to the managed assets



under management allow misinterpretation of the reader or stakeholders where they thought the number of funds is enormous while the actual liquid funds balance is not as huge as what is presented. The issuance of PERBAZNAS no 5 the year 2018, rule additional recording entries of managed assets. The entries of Allocation of funds for managed assets are as follow:

Table 7: Record for Allocation Of Funds For Managed Assets

Allocation of the utilization of managed assets - Zakat Fund	XXX	
Allocation of the utilization of managed assets – Infaq Fund	XXX	
Cash		XXX

Presentation Proposal

To avoid errors or misinterpretations balance of funds in the Statement of Financial Position due to the content of managed assets, we propose a new composition of funds. Some proposed changes would consist of 1) Creating a separate account for managed assets in the fund's group. 2) The value of managed assets in the balance of zakat funds or infaq funds is excluded and separated in the managed assets account. 3) the managed assets account lasts because of its non-liquid nature and its most extended helpful life.

1. This new presentation will have a positive impact in presenting a more informative statement of financial position. This informativeness can be seen for several reasons: The Balance of funds, either zakat or infaq, becomes more realistic because it presents the balance of funds.
2. Stakeholders can immediately read an overview of the managed assets balance without having to view separated reports. A separate managed asset report is used to view details of the managed assets.
3. The separation of the managed assets in the statement of financial position makes amil zakat look more strategic because it reflects the long-term trust that can be seen from the managed asset.

Table 8: Proposed Presentation For Managed Assets

Funds and managed assets		20X2	20X1
Zakat Fund		XXX	XXX
Infaq Fund		XXX	XXX
Dana Amil		XXX	XXX
Non-halal funds		XXX	XXX
Managed Assets		XXX	XXX
total		XXX	XXX

Table 9: Proposed presentation for managed assets in Statements of changes in funds

		20X2	20X1
Zakat Funds			

Receipt		XXX	XXX
Disbursement		XXX	XXX
Surplus (deficit)		XXX	XXX
Beginning Balance		XXX	XXX
Ending Balance		XXX	XXX
Infaq Funds			
Receipt		XXX	XXX
Disbursement		XXX	XXX
Surplus (deficit)		XXX	XXX
Beginning Balance		XXX	XXX
Ending Balance		XXX	XXX
Managed Assets			
Increase of Managed Assets		XXX	XXX
Decrease of Managed Assets		XXX	XXX
Beginning Balance		XXX	XXX
Ending Balance		XXX	XXX
Total			

The emergence of PERBAZNAS no 5 in the year 2018, in our opinion, only confirms the name of the managed assets account and explains that the managed asset can come from zakat or infaq funds. However, it did not solve the problem of informativeness in the presentation in the statement of financial position (LPK) and the Statements of Changes in funds LPD. Allocation entries can be review as in table 5 above.

Table 10: Record for allocation of funds for managed assets – existed

Allocation of the utilization of managed assets - Zakat Fund	XXX	
Allocation of the utilization of managed assets – Infaq Fund	XXX	
Cash		XXX

Asset transactions in an LPD are arguably not like ordinary transactions. Because the LPD itself is not purely a collection of nominal accounts, it includes fund balances which are also LPD accounts; since the fund balance account in the LPD is also an LPD account, the presentation of the accounts on the two is sometimes inconsistent. The inconsistency occurs because the amounts presented are different while the account names are the same. This discrepancy occurs because there are differences in the presentation of assets under management in the two reports.

The account "Allocation of the utilization of assets under management" both zakat and infaq is a distribution account. So that at the time of recording the transaction, there is no record to the LPK. Alternatively, to be precise, there is no explanation about how to record it to LPK.



In our opinion, additional journal entries are necessary to record the increase of assets and managed assets in the LPD in addition to "Allocation of the utilization of the managed assets. "Plus a reclassification of assets under management from the LPD fund balance. So that the complete journal of the managed asset allocation transaction becomes:

Table 11: Record For Allocation Of Funds For Managed Assets – Proposed

Allocation of the utilization of assets managed -		XXX	
Zakat Funds			
Cash			XXX
Assets		XXX	
Increase in managed assets (LPD)			XXX
Zakat Funds (LPK)		XXX	
Managed Assets (LKP)			XXX

The increase in managed assets will return the amount of zakat / Infaq balances to the LPD to its original amount. These entries is carried out, because the distribution of managed assets is not pure distribution.

Conclusion

The recording and presentation of managed assets presented by the Amil zakat prepared based on PSAK 101 and 109 and PERBAZNAS No. 5 of 2018 are still less informative. This un-informativeness causes the presentation of managed assets and funds balances to be inaccurate and does not reflect the strategic value of amil zakat. This un-informativeness can be seen in both the statement of financial position and the statements of changes in funds. This article proposes a presentation of managed assets in the balance of funds in the statement of financial position (LPK) and presents an increase in assets under management in the statements of changes in funds (LPD).

Suggestion

The alternative presentation can be selected in the statements of changes in funds. The increase in assets under management is part of the balance in the funds of each zakat and infaq group or included in a separate report in the managed assets group.

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Matlamat Pembangunan Mampan (SDG5): Kajian Keseimbangan Jantina dalam Pendaftaran Pelajar di Kolej Komuniti Malaysia

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Abstrak

Matlamat Pembangunan Mampan 5: Kesaksamaan Jantina (SDG5) merupakan matlamat bagi kesaksamaan jantina dan memperkasa golongan wanita dan kanak-kanak perempuan. Kajian ini bertujuan untuk menilai keseimbangan jantina dalam pendaftaran pelajar di Kolej Komuniti Malaysia dengan fokus kepada pendaftaran pelajar lelaki dan wanita dalam pelbagai bidang pengajian. Meskipun terdapat usaha oleh kerajaan dan pihak institusi untuk meningkatkan penyertaan wanita dalam bidang STEM (Sains, Teknologi, Kejuruteraan, dan Matematik), data menunjukkan terdapat jurang jantina yang masih wujud, terutamanya dalam kursus-kursus teknikal dan kejuruteraan yang lebih didominasi oleh pelajar lelaki. Kajian ini menggunakan pendekatan kuantitatif dengan menganalisis data pendaftaran pelajar di Kolej Komuniti Malaysia dari tahun 2021 hingga 2023. Hasil kajian menunjukkan ketidakseimbangan jantina dalam beberapa program pengajian, di mana pelajar lelaki mendominasi bidang Kejuruteraan, Pembuatan dan Pembinaan, sementara pelajar wanita lebih banyak memilih bidang Perkhidmatan dan Perniagaan, pentadbiran & perundangan. Kajian ini mencadangkan beberapa langkah untuk meningkatkan keseimbangan jantina dalam pendidikan tinggi, termasuk program pendidikan kerjaya yang lebih inklusif, kesedaran mengenai kepentingan kesaksamaan jantina, serta pengukuhan kerjasama antara institusi pendidikan dan industri untuk menyediakan lebih banyak peluang bagi wanita dalam bidang teknikal dan STEM.

Kata kunci: SDG5, Pendaftaran Pelajar, Wanita, STEM

Pengenalan

Keseimbangan jantina dalam pendidikan tinggi merupakan salah satu elemen penting dalam mencapai matlamat Pembangunan Lestari (SDG5) yang bertujuan untuk memperkasakan wanita dan memastikan kesaksamaan jantina di semua bidang kehidupan, termasuk pendidikan. Di Malaysia, isu ini telah mendapat perhatian yang semakin meningkat, terutamanya dalam konteks penglibatan lelaki dan wanita dalam bidang pengajian tinggi. Meskipun wanita kini semakin aktif dalam pendidikan tinggi, terdapat beberapa cabaran yang perlu ditangani, termasuk perbezaan ketara dalam penyertaan jantina di pelbagai kursus dan program pengajian, terutamanya dalam bidang sains, teknologi, kejuruteraan, dan matematik (STEM), yang masih didominasi oleh pelajar lelaki.

Kajian ini bertujuan untuk menilai keseimbangan jantina dalam pendaftaran pelajar di institusi Kolej Komuniti Malaysia dan mengenal pasti statistik pemilihan kursus mengikut jantina. Walaupun terdapat usaha oleh kerajaan dan pihak kolej komuniti untuk menggalakkan penyertaan pelajar wanita dalam bidang STEM, statistik menunjukkan bahawa terdapat jurang



antara lelaki dan wanita dalam kursus-kursus ini masih ketara. Selain itu, faktor minat, budaya, sosial, dan ekonomi turut memainkan peranan dalam mempengaruhi keputusan pendaftaran pelajar mengikut jantina.

Kolej komuniti memainkan peranan yang sangat penting dalam menyediakan pendidikan dan latihan kepada pelajar yang tidak melanjutkan pengajian ke universiti. Kolej komuniti menawarkan pelbagai kursus teknikal dan vokasional yang bertujuan untuk meningkatkan kemahiran pelajar dalam bidang-bidang tertentu. Walau bagaimanapun, data pendaftaran pelajar menunjukkan bahawa terdapat ketidakseimbangan jantina dalam pelbagai program pengajian di institusi ini. Secara amnya, kursus-kursus teknikal dan kejuruteraan lebih banyak dipelopori oleh pelajar lelaki, sementara kursus seperti perhotelan, seni kulinari, dan perawatan lebih banyak dipelopori oleh pelajar wanita.

Masalah ketidakseimbangan ini memberi kesan yang besar kepada usaha untuk mencapai kesaksamaan jantina dalam dunia pendidikan dan seterusnya di dunia pekerjaan. Salah satu cabaran utama adalah persepsi sosial yang menganggap sesetengah bidang pengajian lebih sesuai untuk satu jantina berbanding yang lain. Contohnya dalam budaya Malaysia, wanita lebih cenderung kepada bidang yang berkaitan dengan penjagaan, perkhidmatan sosial atau pendidikan.

Bagi pelajar lelaki pula, mereka mungkin lebih cenderung untuk meneroka bidang pengajian yang lebih berorientasikan kemahiran dan teknikal. Ketidakseimbangan ini bukan sahaja memberi kesan kepada pilihan kerjaya mereka, tetapi juga boleh menghalang pembangunan kemahiran yang lebih luas, yang penting dalam dunia pekerjaan yang semakin berorientasikan kepada pelbagai disiplin.

Secara keseluruhan, ketidakseimbangan jantina dalam pendaftaran pelajar di Kolej Komuniti kemungkinan besar boleh memberikan implikasi terhadap usaha untuk mencapai kesaksamaan jantina dalam pendidikan dan pekerjaan di Malaysia. Ini juga mempengaruhi peluang yang ada untuk wanita dan lelaki dalam mengejar kerjaya yang mereka minati dan sesuai dengan potensi mereka. Keadaan ini memerlukan perhatian serius dalam bentuk dasar dan inisiatif yang lebih inklusif dan menyeluruh yang bukan sahaja menggalakkan penyertaan wanita dalam bidang teknikal, tetapi juga memberi ruang kepada lelaki untuk menceburi bidang yang dianggap tradisional untuk wanita.

Oleh itu, kajian ini bertujuan untuk menganalisis pendaftaran pelajar mengikut jantina di institusi Kolej Komuniti di Malaysia. Selain itu, kajian ini juga akan menganalisis penyertaan wanita dalam bidang STEM serta objektif yang ketiga adalah dengan menganalisis program pengajian yang mempunyai ketidakseimbangan jantina yang ketara.

Dengan adanya kajian ini, diharapkan dapat memberi gambaran yang lebih jelas mengenai ketidakseimbangan jantina dalam pendaftaran pelajar di Kolej Komuniti. Perkara ini juga boleh



dijadikan rujukan bagi menyediakan cadangan dasar yang praktikal bagi mengatasi cabaran ini. Ini adalah langkah penting dalam usaha untuk mencapai kesaksamaan jantina dalam pendidikan tinggi di Malaysia dan memperkukuh pembangunan sosial dan ekonomi negara yang lebih inklusif.

Kajian Literatur

Menurut Dr. Norah Md Noor di portal utm.my, STEM bermaksud gabungan (integration) bidang sains, matematik, kejuruteraan dan teknologi untuk kemahiran abad ke-21. Perkara ini memberi pendedahan kepada pelajar untuk menyesuaikan diri dengan pekerjaan masa hadapan dan bersaing dengan pelajar lain dari pelusuk dunia.

Keseimbangan jantina dalam pendidikan tinggi telah menjadi topik penting dalam kajian pendidikan global, termasuk di Malaysia. Pelbagai kajian telah menunjukkan bahawa penyertaan wanita dalam pendidikan tinggi semakin meningkat, tetapi jurang jantina masih wujud dalam beberapa bidang pengajian, terutama dalam bidang teknikal dan STEM. Dalam konteks Malaysia, isu ketidakseimbangan jantina dalam institusi pengajian tinggi, khususnya di kolej komuniti, memerlukan perhatian serius.

Menurut kajian oleh Mohd Salleh Lebar (2002), pelajar lelaki lebih berminat kepada bidang teknikal dan hands on. Faktor budaya dan sosial, termasuk persepsi bahawa bidang teknikal adalah lebih sesuai untuk lelaki, menjadi salah satu sebab utama ketidakseimbangan ini. Emma Smith (2011) juga mengesahkan bahawa walaupun bilangan pelajar wanita dalam pendidikan tinggi semakin meningkat, jumlah mereka yang terlibat dalam bidang STEM masih kekal terhambat, yang dianggap sebagai bidang yang didominasi lelaki.

Di samping itu, kajian Nurhamizah Rashid et al. (2021) menyatakan bahawa kurangnya sokongan dan mentor wanita dalam bidang teknikal menyebabkan pelajar wanita berasa kurang yakin untuk menceburi bidang tersebut. Oleh itu, satu pendekatan yang lebih inklusif diperlukan bagi menggalakkan wanita untuk memasuki bidang-bidang ini. Seiring dengan itu, kajian Nurhamizah Rashid et al. (2021) menunjukkan bahawa faktor persekitaran kerja, psikososial dan keadaan ditempat kerja memainkan peranan penting meningkatkan penyertaan wanita dalam bidang STEM.

Kajian juga menunjukkan bahawa kolej komuniti memainkan peranan penting dalam menawarkan alternatif kepada pelajar yang tidak melanjutkan pengajian ke universiti. Oleh itu, terdapat keperluan untuk mengkaji faktor-faktor yang mempengaruhi pemilihan kursus mengikut jantina di kolej komuniti bagi mencapai keseimbangan yang lebih baik dimasa hadapan.

Metodologi Kajian

Penyelidikan ini menggunakan pendekatan kuantitatif untuk menganalisis keseimbangan jantina dalam pendaftaran pelajar di Kolej Komuniti di Malaysia. Pendekatan kuantitatif dipilih kerana membolehkan pengumpulan dan analisis data secara objektif. Keputusan dari analisa ini pula

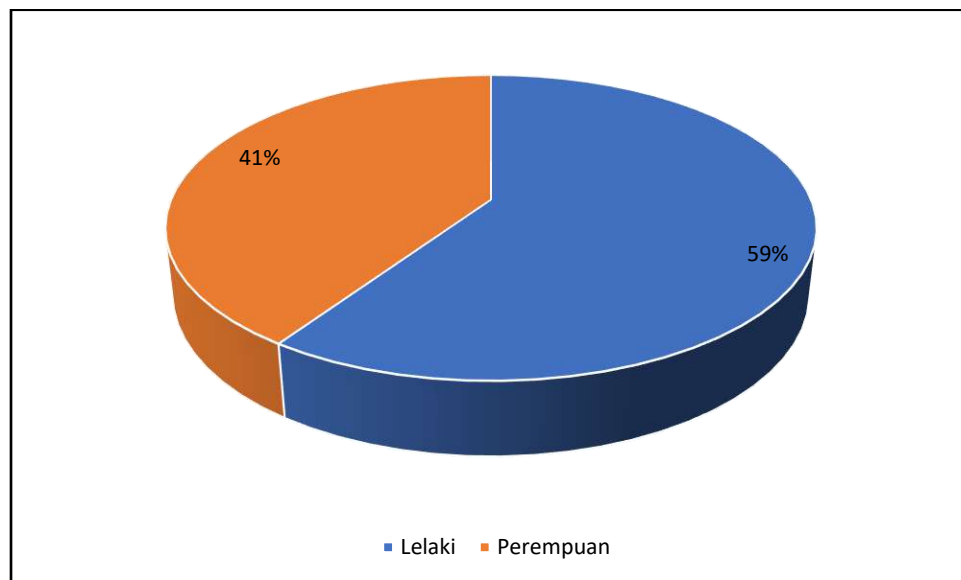
akan memberikan gambaran yang jelas tentang corak pendaftaran pelajar mengikut jantina. Kajian ini akan menggunakan data statistik yang diperolehi daripada rekod pendaftaran pelajar kolej komuniti dari portal rasmi Kementerian Pendidikan Tinggi.

Kajian ini tidak membuat pemilihan populasi dan sampel, malah akan mengambil keseluruhan data dari Portal Rasmi Kementerian Pendidikan Tinggi dan Community College Management System (CCMS) untuk dianalisis. Data yang dikumpul akan merangkumi maklumat mengenai jantina pelajar, kursus yang didaftarkan, tahun pengajian, dan latar belakang demografi pelajar. Data ini akan dikumpulkan untuk tempoh beberapa tahun bagi membolehkan analisis tren dan perubahan dalam penyertaan pelajar mengikut jantina.

Data yang dikumpulkan akan dianalisis menggunakan perisian statistik seperti SPSS (Statistical Package for the Social Sciences) atau Excel untuk menentukan pola pendaftaran pelajar mengikut jantina. Analisis deskriptif, seperti frekuensi, peratusan, dan min akan digunakan untuk menggambarkan jumlah pelajar lelaki dan wanita dalam setiap kursus atau program pengajian. Batasan kajian ini adalah hanya melibatkan tempoh 3 tahun terkini iaitu dari tahun 2021 hingga 2023 dan menggunakan data dari Portal Rasmi Kementerian Pendidikan Tinggi sebagai sumber utama dan data dari Community College Management System (CCMS) sebagai rujukan kedua serta tidak melibatkan proses temubual atau soal selidik.

Hasil dan Perbincangan

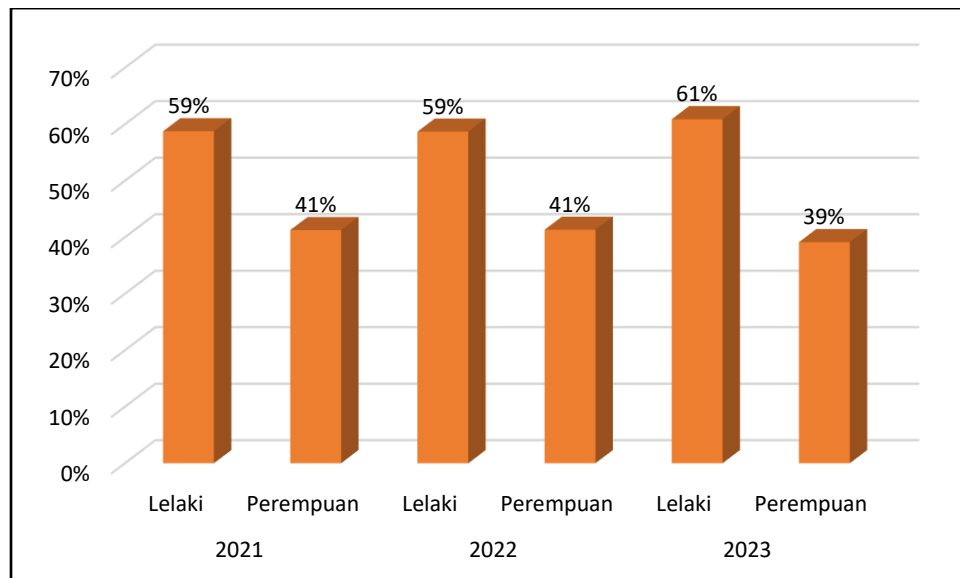
Objektif utama kajian ini adalah untuk menganalisis statistik pendaftaran pelajar mengikut jantina. Oleh itu, Jadual 1 di bawah menunjukkan peratusan pendaftaran pelajar berdasarkan jantina dari tahun 2021 hingga 2023 di Kolej Komuniti Malaysia.



Jadual 1: Peratus Pendaftaran Pelajar Mengikut Jantina tahun 2021-2023

Hasil dari kajian yang dibuat menunjukkan bahawa golongan Lelaki mewakili 59% jumlah pendaftaran di Kolej Komuniti Malaysia. Manakala jumlah pendaftaran pelajar perempuan adalah sebanyak 41%. Salah satu faktor yang menyebabkan perkara ini berlaku adalah pihak Kolej Komuniti menawarkan 57% adalah program dalam bidang Kejuruteraan, Pembuatan dan Pembinaan. Didapati pelajar perempuan Lepas SPM di Malaysia kurang minat untuk menceburkan diri dalam bidang ini. Menurut kajian yang dibuat oleh Norbahiah Misran et al. (2012) kepada lepasan SPM di Matrikulasi, 49% pelajar lelaki berminat untuk menyambung pelajaran ke peringkat seterusnya dalam bidang kejuruteraan, manakala hanya 26% sahaja golongan perempuan yang berminat ke bidang berkenaan.

Perkara ini juga turut memberi impak kepada negara semasa mereka masuk ke alam pekerjaan nanti. Menurut Ir Dr Siti Hamisah Tapsir (Berita Harian, September 18, 2017) hanya 30% wanita terbabit dalam sektor teknikal dan kejuruteraan dan jumlah tersebut masih rendah berbanding dengan golongan lelaki.



Jadual 2: Peratus Pendaftaran Pelajar Mengikut Jantina Mengikut Tahun 2021-2023

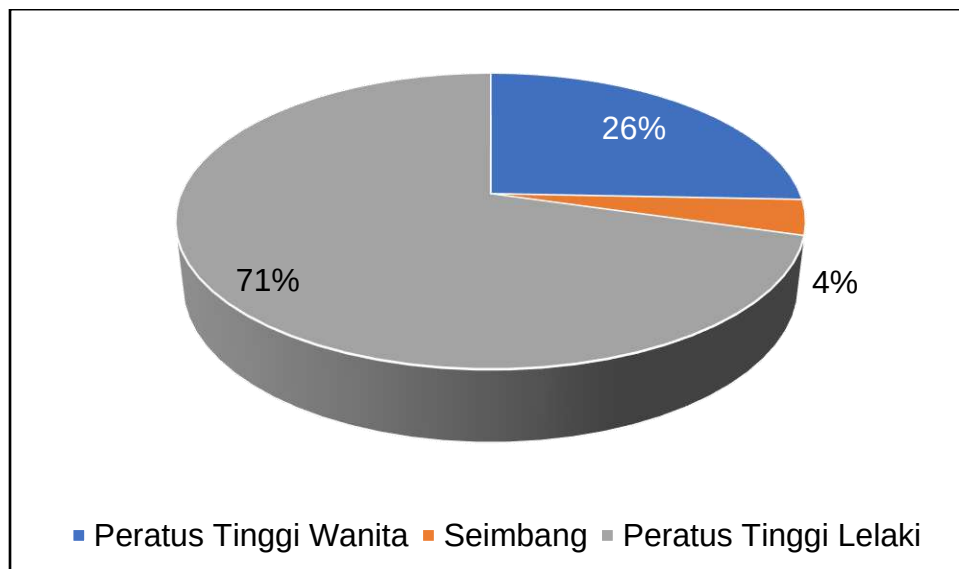
Berdasarkan Jadual 2 pula, boleh disimpulkan bahawa tiada perbezaan yang ketara dari segi peratusan pendaftaran mengikut jantina. Pada Tahun 2021 dan 2022, pendaftaran mencatatkan nilai yang sama iaitu 59% Lelaki dan 41% perempuan. Pada Tahun 2023 pendaftaran wanita sedikit menurun kepada 39%.

Menurut portal xtra Media Prima Berhad, Hamnan Hibrahim (2019) menyatakan bahawa faktor tempat kerja selepas belajar nanti juga mempengaruhi golongan wanita untuk memasuki bidang berkenaan. Ini kerana persepsi umum yang melihat kerja-kerja berkenaan memerlukan komitmen yang tinggi dan melibatkan aktiviti-aktiviti fizikal.

Bidang NEC-2020
00 Program Dan Kelayakan Generik
01 Pendidikan
02 Sastera Dan Kemanusiaan
03 Sains Sosial, Kewartawanan Dan Maklumat
04 Perniagaan, Pentadbiran Dan Perundangan
05 Sains Semula Jadi, Matematik Dan Statistik
06 Teknologi Maklumat Dan Komunikasi
07 Kejuruteraan, Pembuatan Dan Pembinaan
08 Pertanian, Perhutanan, Perikanan Dan Veterinar
09 Kesihatan Dan Kebajikan
10 Perkhidmatan

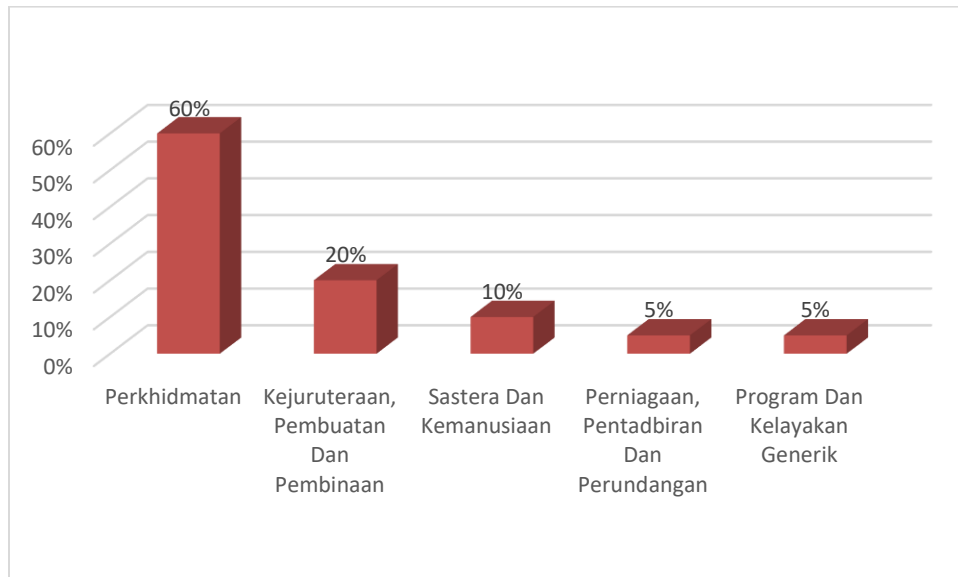
Jadual 3: Pembangunan Kod Pendidikan Nasional (NEC-2020)

Pihak Kolej Komuniti menawarkan 7 bidang iaitu bidang 00, 02, 04, 06, 07, 08 dan 10. Portal Rasmi Kementerian Pendidikan Tinggi menyatakan bahawa semua program pengajian di MTUN dan ILKA (institusi TVET) adalah STEM bagi semua kod NEC 2020. Oleh yang demikian, semua bidang yang ditawarkan oleh Kolej Komuniti adalah STEM. Merujuk kepada objektif kedua yang bertujuan untuk melihat statistik penyertaan wanita dalam program STEM berdasarkan pendaftaran pelajar, data daripada Jadual 1 menunjukkan bahawa sebanyak 41% pelajar wanita telah mendaftar dalam bidang ini. Walaupun statistik berkenaan menunjukkan dibawah 50% tetapi masih tinggi berbanding dengan laporan Pertubuhan Pendidikan, Saintifik dan Kebudayaan Pertubuhan Bangsa-Bangsa Bersatu (UNESCO), menyatakan hanya 30% pelajar perempuan memilih bidang yang berkaitan sains, teknologi, kejuruteraan dan matematik (STEM} di peringkat pengajian tinggi di seluruh dunia (AstroAwani.com, 14/03/2022).



Jadual 4: Peratus Pendaftaran Mengikut Program

Merujuk kepada objektif untuk menganalisis program pengajian mengikut jantina, Jadual 4 menunjukkan tiga keadaan di mana berlaku perbezaan dalam peratusan pendaftaran. Walaupun pada statistik keseluruhan golongan lelaki mendominasi pendaftaran pelajar, masih terdapat 26% program yang diterajui oleh golongan wanita dan 4% jumlah pendaftaran diantara lelaki dan wanita adalah sama.



Jadual 5: Peratus Pendaftaran Mengikut Program Didominasi Pelajar Wanita

Merujuk kepada Jadual 5, 60% dari program yang didominasi oleh wanita adalah dari Bidang Perkhidmatan dan paling rendah adalah bidang Perniagaan, Pentadbiran & Perundangan serta Program & Kelayakan Generik, masing-masing mewakili 5%. Manakala Program yang paling tinggi didaftarkan oleh golongan wanita pula adalah Program Sijil Fesyen & Pakaian, diikuti dengan Sijil Terapi Kecantikan & Spa serta Sijil Pastri.

Kesimpulan dan Cadangan

Kajian ini telah meneliti keseimbangan jantina dalam pendaftaran pelajar di Kolej Komuniti di Malaysia, dengan fokus kepada statistik pendaftaran mengikut bidang dan program. Hasil daripada analisis data pendaftaran pelajar yang dijalankan, kajian ini mendapati bahawa terdapat ketidakseimbangan jantina dalam beberapa bidang pengajian. Pelajar lelaki lebih cenderung untuk memilih bidang Kejuruteraan, Pembuatan Dan Pembinaan, manakala pelajar wanita lebih dominan dalam bidang Perkhidmatan Perniagaan, pentadbiran dan perundangan.

Faktor budaya, sosial, dan ekonomi memainkan peranan penting dalam mempengaruhi keputusan pelajar untuk memilih kursus tertentu. Stereotaip jantina yang wujud dalam masyarakat seringkali mempengaruhi pemikiran pelajar dalam memilih bidang pengajian. Walaupun terdapat usaha kerajaan dan institusi pendidikan untuk menggalakkan penyertaan wanita dalam bidang teknikal, masih banyak cabaran yang perlu dihadapi, termasuk kekurangan sokongan dan mentor wanita dalam bidang-bidang tersebut.



Berdasarkan hasil kajian ini, beberapa cadangan penambahbaikan boleh diambil untuk meningkatkan keseimbangan jantina dalam pendaftaran pelajar di institusi pengajian tinggi komuniti di Malaysia. Cadangan-cadangan ini bertujuan untuk mengimbangi jurang jantina dalam pilihan kursus dan meningkatkan penyertaan pelajar lelaki dan wanita dalam pelbagai bidang pengajian.

Program Pendidikan dan Kesedaran Awal Mengenai Pilihan Kerjaya dilihat boleh mengubah persepsi sosial mengenai pilihan kerjaya yang sesuai mengikut jantina, pihak sekolah dan kolej komuniti dicadangkan meningkatkan program pendidikan kerjaya untuk menggalakkan pelajar untuk memilih bidang berdasarkan minat dan bakat. Pendedahan awal kepada peluang kerjaya dalam bidang STEM juga perlu dimulakan seawal di peringkat sekolah menengah, dengan memperkenalkan kursus-kursus yang menarik bagi pelajar lelaki dan wanita.

Menurut M.H.Norhidayah et al. (2017), pengaruh ibu bapa atau rakan sebaya memainkan peranan penting dalam pemilihan kursus pengajian. Salah satu cadangan penambahbaikan dalam kajian ini adalah mengadakan Program Kesedaran Keluarga dan Komuniti. Usaha perlu dilakukan untuk mendidik ibu bapa dan komuniti mengenai kepentingan memberi kebebasan kepada anak-anak untuk memilih bidang pengajian berdasarkan minat mereka tanpa mengira jantina. Program penerangan dan kesedaran tentang pentingnya kesaksamaan jantina dalam pendidikan boleh membantu mengubah pandangan tradisional yang masih wujud dalam masyarakat.

Cadangan seterusnya adalah Program Pengukuhan Kerjasama Antara Institusi Pendidikan dan Industri. Kerjasama antara institusi dan industri dalam menyediakan peluang latihan dan pekerjaan yang lebih terbuka kepada pelajar wanita dalam bidang teknikal dan STEM perlu diperkukuhkan. Latihan industri yang memberi peluang kepada pelajar untuk bekerja dalam persekitaran profesional boleh meningkatkan keyakinan pelajar wanita dalam memilih bidang-bidang ini dan memudahkan mereka untuk menempuh dunia pekerjaan selepas tamat pengajian. Secara keseluruhannya, kajian ini memberikan gambaran yang lebih jelas mengenai ketidakseimbangan jantina dalam pendaftaran pelajar di kolej komuniti. Dengan mengambil kira cadangan-cadangan ini, diharapkan dapat tercapai keseimbangan jantina yang lebih baik dalam pendidikan tinggi di Malaysia, khususnya di kolej komuniti. Usaha ini bukan sahaja akan memberikan peluang yang lebih seimbang untuk semua pelajar, tetapi juga menyumbang kepada pembangunan sosial dan ekonomi negara yang lebih inklusif dan berdaya saing.

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Trend Pendaftaran Pelajar dalam Era Pasca COVID-19 di Kolej Komuniti

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Abtrak

Pandemik COVID-19 telah memberi kesan mendalam terhadap sektor pendidikan di seluruh dunia, termasuk di Malaysia dan khususnya di kolej komuniti. Kajian ini bertujuan untuk menganalisis trend pendaftaran pelajar di kolej komuniti pasca COVID-19 dari tahun 2021 hingga 2023. Fokus utama kajian adalah untuk mengkaji perubahan dalam jumlah pendaftaran, pilihan bidang pengajian, dan demografi pelajar selepas pandemik. Kaedah kuantitatif digunakan dengan menganalisis data pendaftaran pelajar yang diperoleh dari Portal Rasmi Kementerian Pendidikan Tinggi dan Community College Management System (CCMS). Hasil kajian mendapati bahawa purata peningkatan CAGR bagi 13 negeri adalah pada kadar 2.3%. Negeri Terengganu menunjukkan peningkatan pelajar pada kadar yang tertinggi iaitu 18%. Manakala bagi CAGR mengikut Bidang pula, Program Asas dan Sains, Matematik & Komputer menunjukkan peningkatan tertinggi iaitu masing-masing pada kadar 11% dan 7%. Kajian ini juga menunjukkan bahawa pelajar pasca COVID-19 lebih memilih bidang pengajian yang mempunyai potensi besar dalam menyediakan peluang kerjaya yang lebih baik. Penemuan ini mencadangkan agar kolej komuniti memperkenalkan lebih banyak program yang relevan dengan keperluan industri dan menyediakan akses pembelajaran dalam talian yang lebih fleksibel. Kajian ini diharapkan dapat memberi gambaran jelas mengenai cabaran dan peluang yang wujud dalam pendidikan pasca COVID-19, serta memberi cadangan untuk meningkatkan pendaftaran pelajar dan kecemerlangan pendidikan teknikal dan vokasional (TVET) di Malaysia.

Kata kunci: Pasca COVID-19, Pendaftaran Pelajar, TEVT

Pengenalan

Penyebaran pandemik COVID-19 pada tahun 2020 dan ke 2021 telah memberi kesan kepada semua aspek kehidupan manusia. Sejak pandemik ini bermula, pelbagai perkara sudah mula berubah dari segi cara berkomunikasi, bekerja, serta proses melaksanakan pengajaran dan pembelajaran (PdP). Sebagai contoh, hari ini, sektor sosial dan jualan runcit sudah mula mengadaptasi norma baru seperti bekerja dari rumah (BDR) dan pembelajaran atas talian.

Namun, selepas fasa puncak pandemik, dunia kini berada dalam era pasca COVID-19, di mana negara-negara sedang berusaha untuk pulih dan menyesuaikan diri dengan cabaran yang ditinggalkan oleh krisis global ini. Era pasca COVID-19 tidak hanya membawa harapan, tetapi juga memerlukan perubahan dan penyesuaian dalam banyak sektor, termasuk ekonomi, pendidikan, kesihatan, dan kehidupan sosial.



Dalam sektor pendidikan, contohnya, pasca COVID-19 telah membawa perubahan besar dalam cara pendidikan disampaikan, dengan penekanan lebih kepada pembelajaran dalam talian, fleksibiliti pembelajaran, dan pengajaran yang lebih berasaskan teknologi. Begitu juga dengan sektor ekonomi yang perlu menyesuaikan diri dengan peralihan ke arah ekonomi digital dan model kerja jarak jauh.

Era post COVID-19 adalah zaman di mana dunia belajar untuk hidup dengan virus ini, menerapkan langkah-langkah pencegahan yang lebih baik, dan mencari cara untuk membina semula dan memperkukuh sistem yang ada. Walaupun cabaran yang dihadapi tidak mudah, keadaan ini juga membuka peluang baru untuk inovasi, transformasi digital, dan perubahan dalam pola kehidupan manusia. Kajian ini merujuk kepada kajian atau analisis yang dijalankan untuk melihat perubahan yang berlaku dalam sektor pendidikan, khususnya di kolej komuniti, selepas pandemik COVID-19. Pandemik ini memberi impak besar kepada pelbagai aspek kehidupan, termasuk sistem pendidikan di seluruh dunia.

Pandemik COVID-19 telah memberikan impak yang mendalam kepada sektor pendidikan di seluruh dunia, termasuk institusi pendidikan tinggi seperti kolej komuniti. Sebagai institusi yang menyediakan Pendidikan dan Latihan Teknikal dan Vokasional (TVET) dan mampu diakses oleh golongan pelajar yang pelbagai, kolej komuniti memainkan peranan penting dalam membentuk masa depan pelajar dan menyediakan mereka untuk memasuki pasaran kerja. Namun peralihan secara beransur kepada kaedah pembelajaran dalam talian, serta ketidakpastian ekonomi yang ditimbulkan oleh pandemik telah menyebabkan perubahan dalam pola pendaftaran pelajar di kolej komuniti.

Salah satu cabaran utama yang akan dibincangkan adalah penurunan atau peningkatan jumlah pendaftaran pelajar di banyak kolej komuniti akibat kesan dari penularan virus ini. Keadaan ini mungkin berkait rapat dengan kehilangan pekerjaan dan pengurangan peluang pekerjaan yang berlaku akibat daripada krisis global tersebut. Selain itu, peralihan kepada pembelajaran dalam talian telah memberikan cabaran kepada pelajar yang tidak mempunyai akses yang mencukupi kepada teknologi atau sokongan pembelajaran dalam talian, menyebabkan mereka terpinggir dalam sistem pendidikan.

Di samping itu, terdapat perubahan dalam minat pelajar terhadap kursus-kursus tertentu selepas COVID-19. Pelajar kini lebih cenderung memilih kursus yang menawarkan kemahiran yang relevan dengan pasaran kerja pasca-pandemik, terutamanya dalam bidang teknologi, kesihatan, dan perkhidmatan yang berkaitan dengan pemulihan ekonomi. Fenomena ini menuntut analisis yang mendalam untuk memahami faktor-faktor yang mempengaruhi pendaftaran pelajar serta trend yang muncul dalam memilih bidang pengajian.

Oleh itu, kajian ini bertujuan untuk menganalisis trend pendaftaran pelajar di kolej komuniti dengan tujuan untuk memberikan gambaran lebih jelas mengenai cabaran dan peluang dalam



sistem pendidikan tinggi di Malaysia selepas krisis global ini. Berikut adalah objektif utama yang ingin dicapai dalam kajian ini:

- i. Penurunan atau Peningkatan Pendaftaran Pelajar. Analisa pendaftaran pelajar di kolej komuniti berubah selepas pandemik COVID-19.
- ii. Perubahan dalam Pilihan Bidang Pengajian. Analisa perubahan dalam jenis bidang yang dipilih oleh pelajar selepas pandemik.
- iii. Analisa Trend Pengambilan Pelajar Bidang Sains, Matematik dan Komputer.

Kajian Literatur

Pandemik COVID-19 telah memberikan kesan yang mendalam terhadap pendidikan di seluruh dunia, termasuk di kolej komuniti. Sebelum pandemik, kolej komuniti di Malaysia dan negara-negara lain biasanya menawarkan peluang pendidikan yang selari dengan kehendak industri dan fleksibel, terutamanya bagi pelajar yang berminat dengan bidang pengajian teknikal dan vokasional. Namun, selepas pandemik, banyak perubahan signifikan telah berlaku dalam trend pendaftaran pelajar.

Menurut [bernama.com](#) (16/5/2023), pandemik telah menyebabkan pengambilan pelajar politeknik dan kolej komuniti menyusut. Penurunan ini disebabkan oleh beberapa faktor, termasuk ketidakpastian ekonomi yang menyebabkan keluarga berdepan dengan masalah kewangan dan kehilangan pekerjaan, serta kekangan sosial yang membatasi pelajar untuk meneruskan pengajian mereka. Selain itu, pengalihan kepada pembelajaran dalam talian juga memberi cabaran besar kepada pelajar yang tidak mempunyai akses yang mencukupi kepada teknologi.

Beberapa kajian juga menunjukkan bahawa pandemik ini telah mempercepatkan peralihan kepada pembelajaran dalam talian dan hibrid. Dalam kajian yang dijalankan oleh [Singgih Subiyantoro \(2024\)](#), pandemik telah menjadi pemangkin kepada transformasi pendidikan, mendorong institusi untuk menerima teknologi dan pedagogi pembelajaran dalam talian. Pembelajaran dalam talian ini menjadi lebih relevan, terutamanya bagi mereka yang bekerja sambil belajar atau yang mempunyai tanggungjawab keluarga.

Di samping itu, kajian oleh [Trong Luan Nguyen et al. \(2022\)](#) menunjukkan bahawa kebanyakan pemilihan program pengajian dibuat berdasarkan kebolehan untuk mendapatkan pekerjaan pada masa hadapan. Pelajar kini lebih cenderung untuk memilih kursus berdasarkan minat yang memberikan kemahiran yang dapat mendorong mereka untuk mengembangkan kemampuan diri.

Secara keseluruhannya, kajian-kajian ini menunjukkan bahawa pandemik COVID-19 telah mengubah landskap pendidikan di kolej komuniti, dengan kesan yang mendalam terhadap pendaftaran pelajar, jenis kursus yang diambil, dan cara pengajaran dilaksanakan. Oleh itu, kajian lanjut diperlukan untuk memahami dengan lebih mendalam kesan-kesan jangka panjang ini dalam konteks pendidikan pasca-pandemik.



Metodologi Kajian

Kajian ini menggunakan pendekatan metodologi kuantitatif untuk menganalisis trend dalam pendaftaran pelajar di kolej komuniti selepas pandemik COVID-19. Pendekatan kuantitatif dipilih kerana dapat membantu pengkaji dalam menjelaskan dengan lebih terperinci trend yang berlaku. Menurut Creswell, J. W. et al. (2008) metodologi kuantitatif membantu menyusun data dalam bentuk jadual, carta, dan grafik bagi memudahkan pemahaman penyelidik dan pembaca. Penyelidik akan mengumpulkan data kuantitatif daripada rekod pendaftaran pelajar yang disediakan oleh pihak kolej komuniti. Data yang dikumpulkan akan dianalisis menggunakan teknik analisis statistik deskriptif seperti frekuensi, peratusan, dan min untuk menggambarkan trend pendaftaran pelajar.

Antara batasan kajian ini adalah pengumpulan data dari Tahun 2021 – 2023 dan hanya menggunakan data dari Portal Rasmi Kementerian Pendidikan Tinggi sebagai sumber utama dan Community College Management System (CCMS) sebagai rujukan kedua serta tidak melibatkan soal selidik dengan para pelajar atau pensyarah kolej komuniti.

Hasil dan Perbincangan

Hasil dan perbincangan kajian ini akan dibahagikan beberapa skop, diantaranya statistik pendaftaran pelajar, pemilihan kursus serta umur pelajar.

Analisa Pendaftaran Pelajar

Berikut merupakan hasil kajian data pendaftaran pelajar Kolej Komuniti pada tahun 2021 sehingga tahun 2023 iaitu tahun pasca Covid-19. Analisa ini akan melihat pertumbuhan tahunan adalah dengan menggunakan Compound Annual Growth Rate (CAGR).

Formula:

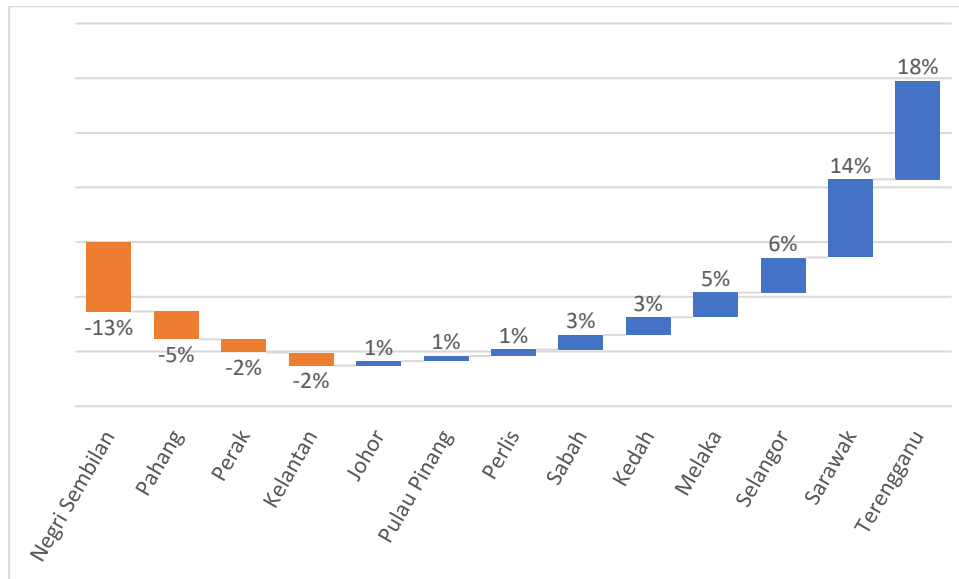
$$\text{CAGR} = \left(\frac{V_{\text{final}}}{V_{\text{begin}}} \right)^{1/t} - 1$$

CAGR = compound annual growth rate

V_{begin} = beginning value

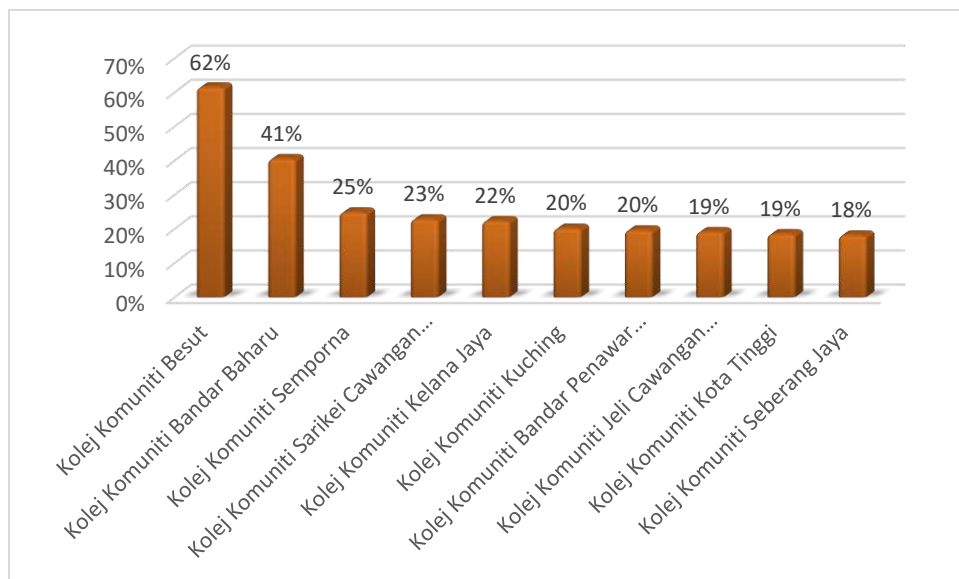
V_{final} = final value

t = time in years



Jadual 1: Peratus CAGR Pendaftaran Kolej Komuniti Tahun 2021-2023

Hasil daripada analisa data maklumat keseluruhan pendaftaran pelajar mengikut negeri semasa pasca covid 19 dari tahun 2021 sehingga 2023 adalah seperti jadual 1. Didapati 9 negeri telah menunjukkan peningkatan peratusan CAGR dari tahun 2021 hingga 2023. Peningkatan ini didahului oleh Negeri Terengganu sebanyak 18%. Walaubagaimanapun, masih terdapat 4 negeri yang masih berada dalam trend menurun akibat dipengaruhi oleh penularan covid 19 ini iaitu Negeri Sembilan, Pahang, Perak dan Kelantan. Terdapat juga faktor-faktor lain yang menyumbang terhadap penurunan ini seperti pelajar lepas SPM lebih cenderung untuk terus bekerja disektor yang menawarkan gaji lumayan tanpa lulus akademik (Muhamad Hafizi Zamri, bernama.com, 10/06/2024).



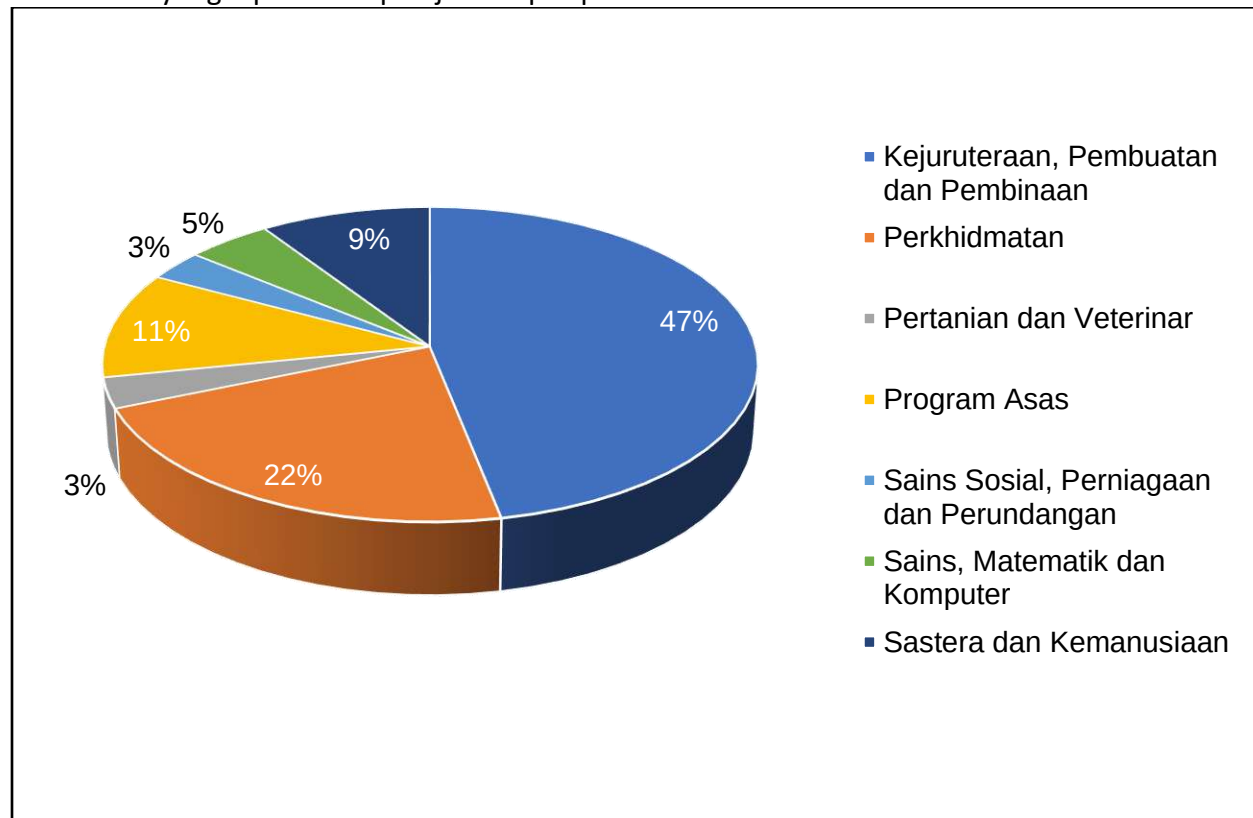
Jadual 2 : 10 Kolej Komuniti Peratus CAGR tertinggi

Bagi CAGR mengikut Kolej Komuniti pula, hasil kajian pada Jadual 2 menunjukkan Kolej Komuniti Besut, Terengganu menunjukkan peningkatan tertinggi pada kadar 62% yang membantu Kolej Komuniti Negeri Terengganu pada kedudukan negeri yang tertinggi. Seterusnya adalah Kolej Komuniti Bandar Baharu pada kadar 41% dan diikuti dengan Kolej Komuniti Semporna sebanyak 25%. Berdasarkan pada statistik berkenaan, terdapat 9 negeri yang menunjukkan peningkatan iaitu mewakili 69.2% dari seluruh kolej komuniti dan 4 negeri yang menunjukkan penurunan iaitu mewakili 30.8%.

Pada keseluruhannya kadar purata CAGR masih menunjukkan peningkatan yang baik iaitu pada kadar 2.3%. Peningkatan positif ini mencerminkan peningkatan yang stabil dan usaha-usaha yang dilakukan oleh institusi pendidikan serta sokongan daripada kerajaan dan masyarakat terus meningkatkan pendaftaran pelajar. Peningkatan ini menandakan bahawa terdapat potensi yang besar dalam sektor pendidikan untuk terus berkembang walaupun dalam situasi yang mencabar.

Analisa Pemilihan Kursus

Kajian dan perbincangan di sektor ini akan mengupas berkenaan analisa perubahan jenis bidang dan kursus yang dipilih oleh pelajar selepas pandemik.

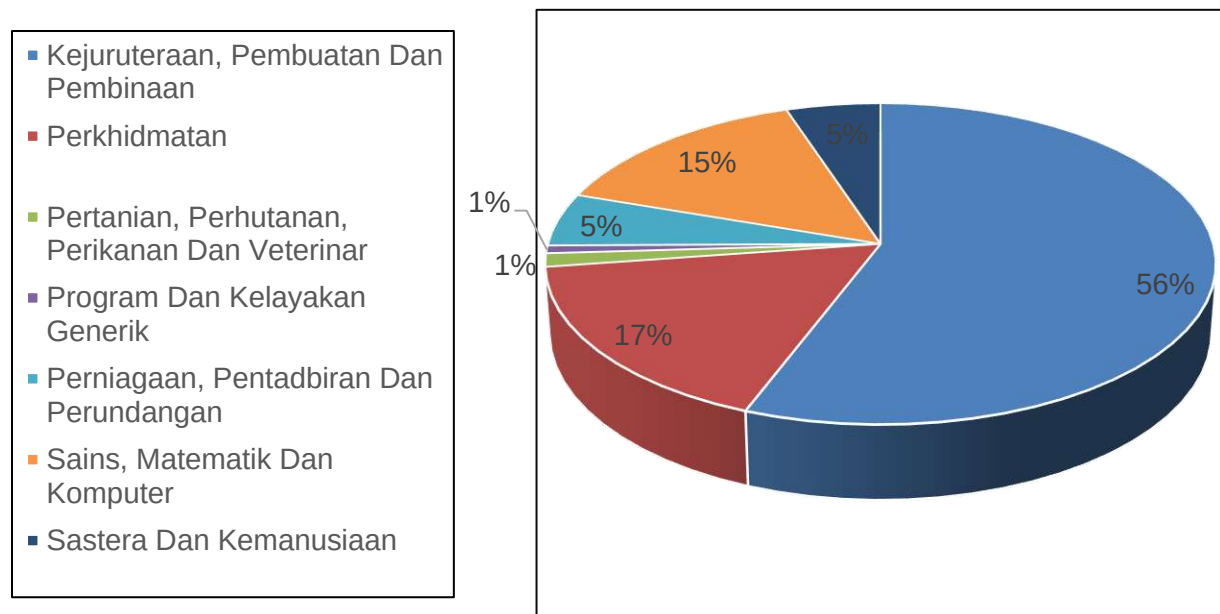


Jadual 3 : Peratus Penawaran Program Mengikut Bidang

Berdasarkan Jadual 3, pihak Kolej Komuniti Malaysia telah menawarkan 7 Bidang Kursus mengikut Kod Pendidikan Nasional 2020 (NEC). Sebagai salah satu institusi peneraju Pendidikan

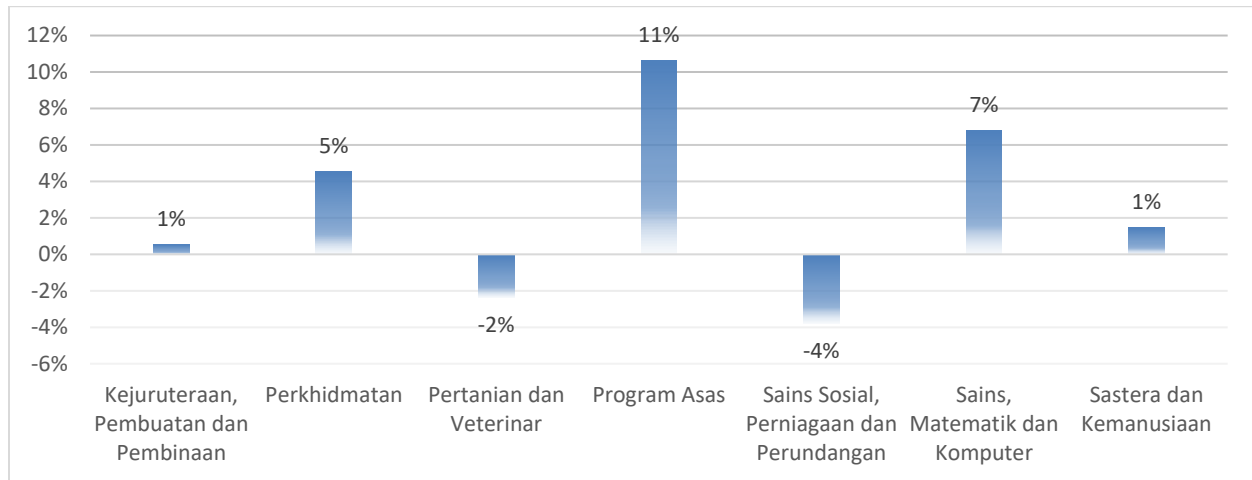
dan Latihan Teknikal dan Vokasional (TVET) negara, bidang-bidang utama yang ditawarkan adalah program pengajian dalam bidang Kejuruteraan, Pembuatan dan Pembinaan sebanyak 47%, dan 22% dalam Bidang Perkhidmatan.

Istimewanya Kolej Komuniti Malaysia, mereka turut juga menawarkan 11% Program Asas kepada golongan Orang Kurang Upaya (OKU). Ini sejajar dengan salah satu tujuan utama penubuhan Kolej Komuniti di Malaysia sebagai institusi yang menyediakan keperluan latihan dan kemahiran pada semua peringkat. Walaubagaimanapun, bilangan tempat untuk kemasukan pelajar OKU adalah rendah kerana proses pengajaran dan pembelajaran memerlukan sistem yang berfokus kepada kemahiran-kemahiran tertentu.



Jadual 4 : Peratus Pendaftaran Pelajar Mengikut Bidang

Hasil kajian data pendaftaran pelajar pasca covid 19 dari tahun 2021 sehingga 2023 pada Jadual 4 pula mendapati Bidang Kejuruteraan, Pembuatan dan Pembinaan mendominasi pada kadar 56% sesuai dengan peratus penawaran program juga yang tertinggi. Manakala Bidang Perkhidmatan pada tempat yang ke 2 iaitu pada 17%.



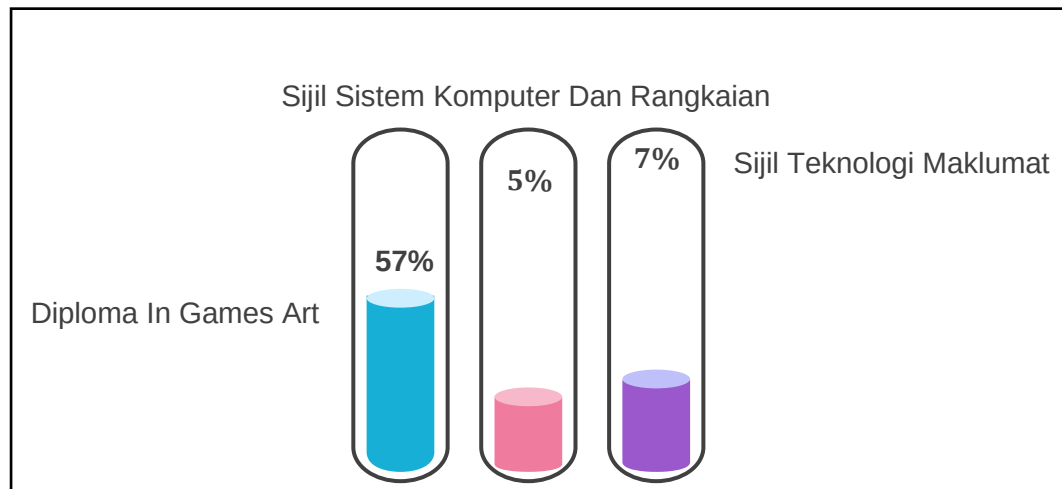
Jadual 5 : Peratus CAGR Pendaftaran Pelajar Mengikut Bidang

Bedasarkan hasil analisa pada Jadual 5, 5 bidang menunjukkan peningkatan peratusan CAGR dari tahun 2021 hingga 2023. Bidang Program Asas dan Sains, Matematik & Komputer menunjukkan peningkatan tertinggi iaitu masing-masing pada kadar 11% dan 7%. Bidang Perkhidmatan juga menunjukkan perkembangan positif iaitu pada kadar 5%. Manakala Bidang Pertanian dan Bidang Sains Sosial, Perniagaan dan Perundangan menunjukkan penurunan pada kadar 2% dan 4%. Pada keseluruhannya, Compound Annual Growth Rate bagi pendaftaran pelajar kolej komuniti berada dalam keadaan yang baik walaupun negara dilanda dengan covid 19. Keseluruhan CAGR adalah pada kadar kenaikan 18%.

Hasil perbincangan didapati terdapat beberapa faktor yang mempengaruhi pemilihan program semasa pasca covid 19 ini. Para pelajar lepasan SPM lebih cenderung memilih program yang mempunyai prospek kerjaya di masa depan. Seiring dengan perubahan ekonomi selepas covid 19, begitu juga muncul sektor-sektor ekonomi baru yang memerlukan pekerja. Penyelidik menyarankan supaya pihak institusi khususnya di Kolej Komuniti dan amnya di seluruh Malaysia supaya peka dengan perubahan ekonomi dan bersedia untuk menawarkan program-program mengikut kehendak industri dan komuniti.

Trend Pengambilan Pelajar Bidang Sains, Matematik dan Komputer.

Menurut Yuen Meikeng (2023), menyatakan dalam artikelnya di portal The Star bahawa pekerja dalam bidang IT dan pembangunan perisian, pemasaran digital, kewangan, dan pengurus projek adalah pekerjaan yang paling dicari menurut Persekutuan Majikan-Majikan Malaysia (MEF) selepas Covid-19. Oleh yang demikian, pengkaji akan menganalisa tren pendaftaran Kolej Komuniti Malaysia berdasarkan program pengajian yang ditawarkan dalam Bidang Sains, Matematik dan Komputer.



Jadual 6 : Peratus CAGR Program dalam Bidang Sains, Matematik dan Komputer.

Kolej Komuniti Malaysia menawarkan 3 program pengajian dalam bidang ini. Program yang paling tinggi mendapat tempat adalah Program Diploma In Games Art. Program pengajian ini menekankan kemahiran praktikal menggunakan teknologi komputer dan perisian khas untuk menghasilkan kandungan kreatif berkualiti tinggi. Berdasarkan hasil analisa data pendaftaran pelajar yang dibuat, program diploma ini menunjukkan CAGR yang paling tinggi iaitu pada perkembangan 57% dari tahun 2021 sehingga 2023. Manakala Sijil Teknologi Maklumat pada kadar 7% dan seterusnya Sijil Sistem Komputer Dan Rangkaian pada kadar 5%. Secara keseluruhannya semua program pengajian dalam bidang ini di atas kadar purata CAGR kolej komuniti iaitu pada 2.3%.

Berdasarkan perkembangan postif program dalam bidang ini, pengkaji melihat lepasan SPM menunjukkan minat yang tinggi juga kepada program Sijil Sistem Komputer & Rangkaian dan Sijil Teknologi Maklumat. Perkembangan positif ini kerana pelajar melihat graduan dalam program ini mempunyai peluang pekerjaan tinggi. Juruteknik dan jurutera dalam sistem komputer, rangkaian dan teknologi maklumat diperlukan dalam pelbagai jenis industri, bukan sahaja dalam bidang komputer tetapi juga diperlukan didalam bidang seperti telekomunikasi, kewangan, penjagaan kesihatan dan teknologi, menjadikannya laluan kerjaya yang stabil dan mendapat permintaan tinggi.

Pihak industri memerlukan pakar untuk menyediakan dan mengekalkan rangkaian yang selamat untuk pekerja yang bekerja dari rumah atau dari jarak jauh. Manakala semua maklumat perniagaan dan promosi telah bergerak ke arah transformasi digital seiring dengan permintaan masyarakat. Pihak pemain industri telah begitu cepat mengadaptasi perkembangan ini dan menjadikan pakar dalam bidang IT sebagai tulang belakang operasi perniagaan moden.

Bagi masyarakat pula, mereka tidak boleh lari dari dengan penggunaan teknologi yang berkembang dalam kehidupan harian. Peningkatan semakin meningkat pada teknologi untuk



tujuan peribadi, sosial dan perniagaan, termasuk rumah pintar, IoT (Internet of Things), dan komunikasi digital. Perkembangan ini seiring dengan operasi yang sedang berkembang seperti pembelian tanpa tunai (*cashless*) dan perkembangan yang pesat dalam media sosial yang bukan sahaja untuk tujuan komunikasi malah juga sebagai platform untuk e-dagang seperti aplikasi tiktok.

Dengan perkembangan yang pesat ini, sudah semestinya akan berlaku ancaman keselamatan siber. Peningkatan dalam aktiviti dalam talian, ancaman keselamatan siber juga meningkat, mendorong syarikat untuk melabur lebih banyak dalam melindungi rangkaian dan data mereka. Disebabkan faktor-faktor ini, permintaan untuk kursus dan graduan dalam sistem komputer, rangkaian dan teknologi maklumat, menawarkan pelajar prospek kerjaya yang baik dalam landskap teknologi yang berkembang pesat.

Cadangan dan Kesimpulan

Pandemik COVID-19 telah memberikan impak yang mendalam terhadap sektor pendidikan, terutamanya dalam konteks kolej komuniti. Perubahan yang berlaku dalam trend pendaftaran pelajar selepas pandemik ini sangat signifikan, dengan banyak faktor yang mempengaruhi keputusan pelajar untuk mendaftar pengajian mereka.

Pendaftaran pelajar di kolej komuniti turut juga dipengaruhi oleh kekangan kewangan, dengan ramai pelajar menghadapi kesulitan dalam menampung kos pendidikan akibat kehilangan pekerjaan atau pendapatan keluarga. Selain itu, peralihan kepada pembelajaran dalam talian telah membuka ruang untuk fleksibiliti, tetapi juga menimbulkan cabaran bagi pelajar yang tidak memiliki akses yang mencukupi kepada teknologi.

Berdasarkan hasil kajian ini, beberapa cadangan penambahbaikan dapat diberikan untuk meningkatkan pendaftaran pelajar di kolej komuniti selepas pandemik COVID-19. Berikut adalah beberapa cadangan untuk memperbaiki trend pendaftaran pelajar di kolej komuniti seperti mengadakan Program Meningkatkan Akses kepada Pembelajaran dalam Talian dan Hybrid. Walaupun semua kolej komuniti telah beralih kepada pembelajaran dalam talian semasa pandemik, masih terdapat cabaran berkaitan akses kepada teknologi dan internet yang stabil. Oleh itu, kolej komuniti perlu menyediakan lebih banyak kemudahan untuk pelajar yang kekurangan akses kepada alat pembelajaran digital. Ini termasuk menyediakan kemudahan komputer di kampus. Selain itu, pengembangan program pembelajaran hibrid, yang menggabungkan pembelajaran dalam talian dan bersemuka, akan memberi fleksibiliti yang lebih besar kepada pelajar.

Pihak institusi juga dicadangkan supaya menawarkan Kursus-Kursus Berkaitan Kemahiran Digital dan Teknologi. Salah satu kesan utama COVID-19 ialah peralihan ke dalam dunia digital dan keperluan untuk memiliki kemahiran teknologi yang lebih tinggi. Oleh itu, kolej komuniti dicadangkan untuk melihat lebih dekat dalam menambah lebih banyak kursus berkaitan kemahiran digital, seperti pembangunan perisian, reka bentuk grafik, pemasaran digital, dan



teknologi maklumat. Kursus ini akan memberi peluang kepada pelajar untuk mempersiapkan diri dengan kemahiran yang relevan dengan pasaran kerja masa depan.

Kerjasama dengan Industri juga akan memainkan peranan yang penting dalam meningkatkan pengambilan pelajar Kolej komuniti. Kolaborasi yang lebih erat dengan sektor industri juga boleh memberi impak positif terhadap pendaftaran pelajar. Melalui kerjasama ini, kolej komuniti boleh menawarkan program latihan industri yang relevan dengan keperluan pasaran pekerjaan. Ini bukan sahaja memberi pengalaman praktikal kepada pelajar, tetapi juga meningkatkan daya saing mereka di pasaran kerja selepas tamat pengajian.

Program *Outreach* bagi meningkatkan kesedaran mengenai kepentingan pendidikan vokasional juga boleh terus dipergiatkan. Sering kali pendidikan teknikal dan vokasional dipandang pilihan ke dua berbanding pendidikan akademik di Malaysia. Oleh itu, usaha untuk meningkatkan kesedaran mengenai pentingnya pendidikan teknikal dan peluang pekerjaan yang ditawarkan oleh kursus-kursus tersebut harus ditingkatkan. Program penerangan kepada masyarakat, terutamanya pelajar sekolah menengah, mengenai potensi kerjaya yang boleh dicapai melalui pendidikan di kolej komuniti boleh membantu menarik lebih banyak pelajar ke arah pendidikan vokasional.

Cadangan kepada penyelidik di masa hadapan, penyelidik boleh terus mengembangkan tajuk ini dengan melihat beberapa aspek lagi yang menyumbang ke arah trend pendaftaran ini seperti bantuan kewangan, kemudahan asrama dan sebagainya. Penyelidik juga boleh menjalankan kajian secara kualitatif dengan cara pemerhatian dan temubual.

Secara keseluruhannya, berdasarkan hasil kajian ini dan cadangan-cadangan ini diharap dapat memberi gambaran dan rujukan kepada pembaca serta asas rujukan bagi program meningkatkan pendaftaran pelajar di kolej komuniti selepas pandemik COVID-19. Dengan mengambil langkah-langkah yang lebih inklusif dan relevan, kolej komuniti dapat memastikan pendidikan yang berkualiti tetap dapat diakses oleh semua lapisan masyarakat dan menyediakan tenaga kerja yang berkemahiran untuk menyokong pembangunan negara pasca pandemik.

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حل المجلس الشعبي الوطني ومبرراته في ظل التعديل الدستوري الجزائري لسنة ٢٠٢٠

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ملخص البحث

إن حل المجلس النيابي يُعد آلية بيد السلطة التنفيذية، تستعملها للتأثير والرقابة الجادة على السلطة التشريعية، فهذا الحق يقابل حق تحريك المسؤولية الوزارية الذي تملكه السلطة التشريعية اتجاه السلطة التنفيذية. ولقد تبني الدستور الجزائري مبدأ حق السلطة التنفيذية في حل الغرفة الأولى من البرلمان-المجلس الشعبي الوطني_ كونه ضرورة أساسية لوقاية الحكومة من تعسف البرلمان في استخدامه لحق سحب الثقة منها، وهو يمثل أخطر أنواع رقابة السلطة التنفيذية على السلطة التشريعية. ويعتبر حق الحل السلاح المقابل للمسؤولية الوزارية المقررة للبرلمان في مواجهة الحكومة، وتظهر قوته وفاعليته في كونه وسيلة للإلغاء المبكر للمجلس النيابي قبل حلول الموعد القانوني المحدد لانتهاء تمثيله للشعب الذي انتخبه. وبحل المجلس النيابي يتوقف عن أداء وظائفه التشريعية والرقابية، مما يفتح المجال أمام رئيس الجمهورية لممارسة الوظيفة التشريعية التي هي في الأصل من اختصاص البرلمان، وهذا ما يجعل من حق الحل أداة لتكريس تفوق السلطة التنفيذية على السلطة التشريعية في النظام الدستوري الجزائري.

الكلمات المفتاحية: الحل الرئاسي، الحل الوجوبي، التشريع بأوامر، التعديل الدستوري الجزائري لسنة ٢٠٢٠.

المقدمة:

يعتبر الحل وسيلة لإظهار ديمقراطية النظام البرلماني، ويتم استخدامه وفقا لضوابط معينة، ثم يتم اللجوء إلى هيئة الناخبين التي تكون لها الكلمة الأخيرة. وبالرغم مما أثاره هذا الحق في بداية نشأته من اعتراضات حول مدى ضرورته، ولكن ذلك لم يمنع من شيوع الأخذ به في الدساتير البرلمانية المختلفة. وقد يكون حق الحل وزاريا وذلك بناء على طلب الوزارة في حالة نشوب نزاع بينها وبين البرلمان، كما قد يكون حلاً رئاسيا بناء على رغبة رئيس الدولة، الذي يلجأ إليه في حال قيام خلاف بينه وبين البرلمان، وذلك ليدافع عن آرائه وسياسته التي يعتقد أنها تتفق مع ميول ورغبات الأمة. وعليه، سنتناول بالدراسة في هذه الورقة البحثية: مفهوم حق الحل وأنواعه، ثم نتطرق لكيفية تنظيم الدستور الجزائري لسلطة رئيس الجمهورية في حل المجلس الشعبي الوطني، ويكون ذلك من خلال المحاور التالية:

المحور الأول: ماهية حق الحل.

المحور الثاني: الجهة التي تملك حق الحل وفقا للتعديل الدستوري الجزائري لسنة ٢٠٢٠.

المحور الثالث: الضمانات الدستورية لعدم تعسف رئيس الجمهورية في استعمال حق الحل.

المحور الرابع: تطبيقات حق الحل واستعماله كأداة لتكريس تفوق السلطة التنفيذية.

المحور الأول: ماهية حق الحل

يُعد حق حل البرلمان من أهم الحقوق المقررة في النظام البرلماني للسلطة التنفيذية في مواجهة السلطة التشريعية، فهو يمثل سلاحاً موازناً من حيث القوة والفاعلية للسلاح المقابل الذي يملكه البرلمان وهو تقرير المسؤولية السياسية للوزارة. لذلك سنتناول في هذا المحور تعريف حق الحل، نشأته، أسبابه وأنواعه، وسيكون ذلك من خلال ما يلي:

أولاً- مفهوم حق الحل

يُعرّف الفقه الدستوري حق الحل بأنه "إنهاء السلطة التنفيذية مدة المجلس النيابي قبل نهاية المدة القانونية المقررة لنيابة هذا المجلس" (خليل، ١٩٧١، صفحة ٢٥٨)، من خلال هذا التعريف نستنتج ما يلي:

- أن إجراء الحل هو تصرف قانوني، حيث تلجأ إليه السلطة التنفيذية مستندة في ذلك إلى ما هو مقرر في الدستور أو القانون أو الأعراف والتقاليد السائدة في الدولة، وبهذا يخرج عن هذا المفهوم الحل الذي يكون ناتجاً عن استخدام القوة كالثورة أو الانقلاب الذي يطيح بنظام الحكم... الخ.

- أن إجراء الحل هو حق تملكه السلطة التنفيذية وحدها مقابل حق البرلمان في سحب الثقة من الوزارة، فالحل هو السلاح المقابل للمسؤولية السياسية للوزارة المقررة أمام البرلمان، ومن ثم فهو يعمل على حفظ التوازن بين السلطتين التشريعية والتنفيذية.

- أن إجراء الحل نجده فقط في النظام البرلماني، ولا وجود له في نظام الحكم الرئاسي، إذ نجد أن رئيس الجمهورية في الولايات المتحدة الأمريكية باعتبارها مهد النظام الرئاسي، لا يستطيع أن يحل الكونجرس، كما أن هذا الأخير لا يمكنه بالمقابل تقرير المسؤولية السياسية للوزراء. وأيضاً لا وجود لحق الحل أيضاً في نظام حكومة الجمعية النيابية، لأن البرلمان في هذا النظام هو صاحب الكفة الراجحة، وهو وحده الممثل للشعب، أما بالنسبة للحكومة فهي مجرد تابع أو أداة في يد البرلمان، وبذلك لا يمكن أن يكون للتابع حق عزل الأصل.

- أن الحل هو إجراء يتم بموجبه إنهاء حياة البرلمان قبل انتهاء المدة القانونية التي انتخب لأجلها.

- إن الحل وسيلة أساسية لإبراز ديمقراطية النظام البرلماني، ويمثل تطبيقاً سليماً لمبدأ سيادة الأمة الذي يوجب الرجوع إلى هيئة الناخبين، باعتبارها الحكم الأعلى في الدولة، في الأمور المهمة التي تخص مستقبل البلاد، كأن تفصل فيما حدث من خلاف بين المجلس النيابي والحكومة، ومن ثم فهو يُعد بمثابة إجراء للتحكيم الشعبي. وبناءً على ما تقدم، يتبين لنا أن ممارسة حق حل البرلمان يتطلب توافر شروط معينة، وهذه الشروط التي تُعد بمثابة خصائص أساسية لحق الحل تتمثل فيما يلي:

- وجود هيئة نيابية: وهي التي تكون هدفاً أو محلاً للحل، وهذه الهيئة النيابية يقصد بها "عدد من المواطنين ينتخبون بشكل دوري للقيام بشكل جماعي بوظيفة محددة. هي التشريع بصفة أساسية. لفترة زمنية محددة"، وبعد انتخاب أعضاء هذه الهيئة من طرف الشعب، فإنه لا أهمية بعد ذلك سواء كانت هذه الهيئة النيابية تتألف من مجلس واحد أو من مجلسين (مجلس أعلى ومجلس أدنى)، ويمارس إجراء الحل عادة ضد مجلس البرلمان الأدنى، كما يمكن أن يمارس كذلك ضد مجلس البرلمان الأعلى إذا تم تكوينه على أساس انتخابي لا على أساس وراثي.

- تصرف صادر عن السلطة التنفيذية، باعتبار أنها سلطة مستقلة في الدولة، ومخول لها استخدام حق الحل.

- توجيه الدعوة لهيئة الناخبين لانتخاب برلمان جديد خلال فترة زمنية معقولة، وتعتبر الانتخابات العامة التي تلي إجراء حل البرلمان ضماناً هاماً لمنع إساءة استعمال الحق في الحل. أما إذا كان رئيس الدولة يستطيع حل المجلس النيابي دون أن يكون ملزماً بتوجيه دعوة لانتخاب مجلس جديد، ففي هذه الحالة لا نكون أمام نظام حكم برلماني أو نيابي، بل نكون بصدد نموذج خاص لدول شمولية.

ثانيا-نشأة حق الحل

لقد نشأ حق الحل في إنجلترا سنة ١٧٨٤، إذ نشب خلاف بين وزارة "وليم بيت William Pitt"، وهو من زعماء حزب التوري، وبين مجلس العموم البريطاني بصدد مشروع قانون خاص بإدخال إصلاحات على نظام إدارة الهند، وكانت الوزارة تؤيد وجهة نظر الملك، والتي تتعارض مع وجهة نظر مجلس العموم، لذلك طلب مجلس العموم من الملك إقالة الوزارة، إلا أن رئيس الوزراء استطاع أن يتفق مع الملك على حل مجلس العموم وإجراء انتخابات جديدة، ومن نتائج هذه الانتخابات فقدان المعارضة لعدد كبير من مقاعدها، وانتصر رئيس الوزراء "وليم بيت" انتصاراً تاماً، وهكذا انتهت المعركة، وأثبت الاستفتاء أن مجلس العموم لم يعد معبراً عن رأي الأمة في موقفه (صبري، ١٩٥٣، صفحة ١٤٦).

ويتضح مما سبق أنه عند حدوث نزاع جدي بين الوزارة والبرلمان، فإنه للوزارة بدلاً من أن تستقيل، اللجوء إلى حل مجلس العموم واستفتاء الناخبين من أفراد الشعب في هذا النزاع، فإذا أيدتها الناخبون فإنها تظل في مركزها، وإلا وجبت استقالتها. وحينئذٍ تتولى المعارضة مقاليد الحكم، وبذلك أصبحت الوزارة تستمد ثقتها من هيئة الناخبين لا من البرلمان. وهذا يعني أن هيئة الناخبين باتت هي صاحبة السيادة العليا، وصارت الوزارة تبذل كل نشاطها لأن تكون على وفاقٍ مع هيئة الناخبين ومحل ثقتها. وعليه لم يعد عملها يقوم على إقناع البرلمان بسياساتها العامة، وإنما يقوم على إقناع الشعب، ولذلك تلجأ الوزارة عادةً إلى هيئة الناخبين للدفاع عن وجهة نظرها.

ثالثا-الخلافات الفقهية حول ضرورة حق حل البرلمان

لقد نشأ حق الحل-كما ذكرنا سابقاً-في إنجلترا، وانتقل منها لبقية الدساتير البرلمانية المختلفة، وبالرغم مما أثاره هذا الحق في بداية نشأته من اعتراضات حول مدى ضرورته، فلم يمنع هذا من شيوع الأخذ به. إذ تعرض حق الحل في بداية نشأته لكثير من الانتقادات حول مدى ضرورته، حيث رأى البعض عدم الاعتراف بحق الحل لأن النظام البرلماني من الممكن أن يقوم بدون وجوده، واستند هذا الرأي إلى أن الحل هو سلاح بيد رئيس الدولة يُمكنه من شل أعمال البرلمان في حاله عدم اتباعه لنهج رئيس الدولة.

كما اعتبر هذا الاتجاه أن حق الحل هو إجراء غير ديمقراطي كونه يتنافى مع مبدأ سيادة الأمة، فالشعب هو الذي يختار ممثليه في المجالس النيابية لمدة محدودة، وعليه لا يمكن منع هذه المجالس من استكمال عملها وانتهاء مدة الوكالة قبل أوانها، وأضاف أصحاب هذا الاتجاه أن حق الحل يُعد خروجاً عن مبدأ الفصل بين السلطات، فهو من شأنه أن يقوي السلطة التنفيذية في مواجهة السلطة التشريعية، الأمر الذي من شأنه أن يعرض مبدأ التوازن المطلوب في النظام الديمقراطي للاهتزاز (العربي، ٢٠١١، صفحة ٣٢).

وعلى العكس من ذلك يرى الرأي المؤيد لحق الحل أن الحل لا يتنافى مع سيادة الشعب، وكذلك لا يتناقض مع مبدأ الفصل بين السلطات لأنه في النهاية استفتاء للشعب من جهة، ومن جهة أخرى يرى المؤيدون أن الدولة لا تلجأ لحل البرلمان إلا إذا كانت مصلحة البلاد تستوجب ذلك، أو إذا خرجت السلطة التشريعية عن الحدود التي أجازها الدستور (الحليم، ٢٠١٤، صفحة ٣٧). كما يرى بعض الفقه أن حق الحل يسمح لرئيس الدولة بإجراء التعديلات الجوهرية لاستقرار نظام الحكم أو لتبني نظام انتخابي جديد، أو تلبية لمقتضيات المصلحة العليا للبلاد وحفاظاً على سلامة الدولة، وهي أمور قد لا يمكن تحقيقها إلا في ظل مجلس نيابي جديد يعبر عن تطلعات الأمة (نوال، ٢٠١٦، صفحة ١٢١).

ومع ذلك فقد ظهر اتجاه ثالث وسط بين الرأيين، ذهب إلى الاعتراف بضرورة وأهمية حق الحل، لكن مع ضرورة ضبط كيفية استخدامه، وحصر الحالات التي تستدعي اللجوء إليه لتفادي التجاوزات المحتملة من رئيس الدولة أو الحكومة في حق السلطة التشريعية، وتتمثل هذه الحالات في (لوهاني، ٢٠٢١، صفحة ٢٨):

في حالة وجود خلاف حاد بين الحكومة والبرلمان، مع تمسك كليهما برأيه رغم كل محاولات حل الخلاف، مما يجعل حل البرلمان خيار ناجحاً لإرجاع الكلمة للشعب الذي يفصل في الخلاف القائم بين السلطتين.

- في كل المسائل التي تمس المصالح العليا للدولة، كأن لا توافق السلطة التشريعية على عقد معاهدات هامة للدولة. في حالة تغير ميول الشعب من الناحيتين السياسية والاجتماعية مع بقاء السلطة التشريعية على نهجها القديم، مما يؤدي إلى نشوء اختلاف في وجهات النظر بين البرلمان والشعب، ففي هذه الحالة يمكن لرئيس الجمهورية حل البرلمان لتفادي تفاقم الوضع، وتحقيقاً لإرادة الشعب.

ومن ثم فإن حق الحل يعتبر وسيلة لإظهار ديمقراطية النظام البرلماني، يتم استخدامه وفقاً لضوابط معينة، وبذلك يتم اللجوء إلى هيئة الناخبين التي تكون لها الكلمة الأخيرة.

رابعاً-أسباب حل البرلمان

لقد اعتبر الفقيه "ديغي Duguitt" أن الحل والمسؤولية السياسية للوزارة الوسيطتان الأساسيتان اللتان تؤثر بهما كل سلطة على الأخرى، ويرى كل من "إيزمان" و"برتملي" أن الحل عنصراً جوهرياً لتوازن النظام البرلماني، وأنه لا يجب أن ننظر إلى الحل من الجانب السلبي كونه يمثل إنهاء لتمثيل شعبي، بل هناك العديد من المبررات التي تدفع السلطة التنفيذية إلى حل البرلمان قبل انتهاء المدة التي انتخب لأجلها.

وهذه المبررات والأسباب التي تكمن وراء قيام السلطة التنفيذية بحل البرلمان ليس من السهل حصرها، وهي أسباب أوجدها الواقع العملي، ومن أهمها نذكر ما يلي (G. Burdeau, 1999, p. 102):

١. النزاع بين البرلمان والحكومة

يقوم النظام البرلماني على فكرة التعاون بين السلطات العامة في الدولة وبصفة خاصة بين السلطتين التشريعية والتنفيذية، إلا أن هذا التعاون لا يمكن أن يؤدي إلى تعايشٍ سلمي بين هاتين السلطتين على وجه الدوام، وعليه لا بد وأن يؤخذ في الاعتبار إمكانية وقوع خلافٍ حقيقي بين البرلمان والحكومة في بعض المسائل الهامة، ويشكل حل البرلمان في هذه الحالة الوسيلة الأمثل للخروج من تلك الأزمة.

ويُعد هذا السبب الأكثر انتشاراً في الأنظمة البرلمانية، فعند حدوث خلاف بين الحكومة والبرلمان، وعلى وجه التحديد عندما يسحب البرلمان الثقة من الحكومة، فإنه لهذه الأخيرة بدلاً من أن تستقيل أن تقوم بحل البرلمان واستفتاء الناخبين من أفراد الشعب في هذا الخلاف، وهذا ما أدى إلى أن يصبح لهيئة الناخبين دوراً هاماً في هذا المجال، حيث تلعب هذه الهيئة دور الحكم بين البرلمان والحكومة ليقرر الناخبين ما إذا كانوا سيستمرون في تأييد الأغلبية القائمة أم أنهم يميلون إلى أن تتولى المعارضة مقاليد الحكم.

2. النزاع بين مجلسي البرلمان

وهذا السبب يمكن تحقيقه في الأنظمة التي تأخذ بنظام المجلسين، ومن أبرزها المملكة المتحدة التي تأخذ بنظام ازدواج الهيئة التشريعية Bicameral System، إذ يتكون البرلمان البريطاني من مجلسين أحدهما منتخب مباشرة من طرف الشعب ويتمثل في مجلس العموم، والثاني غير منتخب، ويتمثل في مجلس اللوردات ذو الأصول الأرستقراطية. ومن بين الدول التي تأخذ أيضاً بنظام المجلسين، نجد فرنسا التي يتكون البرلمان فيها من الجمعية الوطنية ومجلس الشيوخ، وكذلك الجزائر، التي يتكون البرلمان فيها من مجلسين، وهما: المجلس الشعبي الوطني ومجلس الأمة،...إلخ.

ونظراً إلى أن احتمال قيام نزاع بين المجلسين هو أمر وارد، فإن السلطة التنفيذية في مثل هذه الحالة تقوم بحل البرلمان (وبالتحديد الغرفة الأولى، وهي: مجلس العموم في إنجلترا، والجمعية الوطنية في فرنسا، والمجلس الشعبي الوطني في الجزائر)، وهذا يُعد أمراً ضرورياً لا غنى عنه لوضع حد لهذا الخلاف، ومن ثم إعادة الانسجام والتفاهم بين مجلسي

البرلمان، وتحقيق الاستقرار السياسي في البلاد. إذ أن وقوع مثل هذا الخلاف قد يؤدي إلى إعاقة سير البرلمان وإصابته بالشلل أو على الأقل بالجمود، ولهذا يكون حل البرلمان واللجوء إلى هيئة الناخبين لتحكيمها فيما حدث من خلاف بين مجلسي البرلمان أمراً بالغ الأهمية.

3- الحل بسبب تغيير النظام الانتخابي للدولة

قد تلجأ السلطة التنفيذية إلى حل البرلمان بسبب تغيير النظام الانتخابي جراء التعديلات التي تطال القوانين الانتخابية، ومن ثم تحدد موعداً لإجراء الانتخابات التشريعية المبكرة قبل انتهاء المدة التي انتخب البرلمان لأجلها.

4- كون البرلمان لا يمثل جمهور الناخبين

وتمثل هذا السبب في قيام السلطة التنفيذية باللجوء إلى حل البرلمان على أساس أنه لم يعد يمثل إرادة هيئة الناخبين، إذ أنه حتى في غياب أي خلاف بين السلطتين التشريعية والتنفيذية، قد يكون الحل في عدة حالات ضرورياً ولزماً لصالح البلاد، ويكون ذلك عندما تحدث فجوة بين إرادة الشعب وإرادة ممثليه في المجلس النيابي.

فكثيراً ما تتغير آراء الشعب وميولاته السياسية والاقتصادية، في حين يظل البرلمان على نزعته الأولى، وفي هذه الحالة لا يكون الشعب على وفاق مع البرلمان، ولا يكون هذا الأخير معبراً عن إرادة الأمة. وقد يترتب عن ذلك نتائج خطيرة إذا ما تناول البرلمان تقرير المسائل الحيوية في البلاد، لذلك على رئيس الدولة أن يعمل على تحقيق إرادة الرأي العام فيلجأ إلى حل البرلمان.

5- الاحتكام إلى هيئة الناخبين بشأن مسألة محددة

يمكن أن يثور الخلاف بين السلطتين التشريعية والتنفيذية في الدولة حول مسألة معينة، حيث يشكل حسمها أهمية كبيرة في مستقبل البلاد، وفي هذه الحالة فإن السلطة التنفيذية تقوم بحل البرلمان وتحتكم إلى الناخبين لتتعرف على رأيهم فيما يخص تلك المسألة.

6- استعمال السلطة التنفيذية للحل كسلاح ضد المعارضة

قد تلجأ السلطة التنفيذية إلى الحل، وذلك بهدف إحراج المعارضة أمام الرأي العام وإضعاف مركزها، وتملك السلطة التنفيذية الحق في اختيار اللحظة المناسبة لإجراء الانتخابات العامة، والتي تكون عادة بعد إجراء استطلاعات للرأي العام، وترى أن الشعب يؤيدها.

7- الحل بهدف دعم الأغلبية البرلمانية

يمكن أن تقوم السلطة التنفيذية بحل البرلمان كوسيلة لتقوية مركزها بدعم الأغلبية البرلمانية، وذلك كي تستطيع تنفيذ سياستها بسهولة ويسر، وتلجأ الحكومة عادة إلى ذلك في حال وجود تصدع أو انشقاق خطير داخل صفوف الحزب الحاكم أو في حالة ما إذا كانت الأغلبية التي تملكها الحكومة داخل البرلمان ضئيلة لا تمكنها من الاستمرار في تصريف شؤون الحكم بالنجاعة والكفاءة المطلوبة، وهو ما يحدث خاصة في ظل الحكومات الائتلافية.

ولا شك أن حل البرلمان اعتماداً على هذا السبب، ينطوي على مخاطر كبيرة تمس بمكانة الحكومة ومركزها، لأن الانتخابات العامة التي تلي إجراء الحل قد لا تؤدي إلى الغرض منها، والمتمثل في دعم الأغلبية البرلمانية، ولكن على العكس قد تؤدي إلى النيل من هيبة الحكومة، وإضعاف مكانتها، بل وقد تؤدي إلى أن تفقد الحكومة السلطة.

8- الحل بهدف تطابق الأغلبية الرئاسية مع الأغلبية البرلمانية

قد يستعمل رئيس الدولة المنتخب حديثاً حقه في حل البرلمان أو أحد مجلسيه، وهذا حتى تتطابق الأغلبية الرئاسية مع الأغلبية البرلمانية، وهو في الواقع يعتبر حق مشروع للرئيس، الذي يمكنه حل المجلس النيابي إذا انتخب قبله بمدة خاصة وكانت الأغلبية فيه معارضة للرئيس.

ومن التطبيقات العملية لذلك: الحل الذي أجراه الرئيس الفرنسي "ماك ماهون" في ٢٥/٠٧/١٨٣٠ للتخلص من الأغلبية الجمهورية التي انتخبت قبله بأربع سنوات، والحلان اللذان أجراهما الرئيس الفرنسي ميثران حل ٢٢ مايو ١٩٨١ بعد انتخابه لأول مرة بتاريخ ١٠ مايو ١٩٨١، وحل ١٤ مايو ١٩٨٨ بعد إعادة انتخابه لعهدته الثانية بتاريخ ٨ مايو ١٩٨٨، وأفرز الحل الأول أغلبية مريحة، أما الحل الثاني فقد أفرز أغلبية نسبية (portelli, 1999, p. 191).

وتجدر الإشارة إلى أن الدستور الجزائري لم يقيد رئيس الجمهورية بأي شرط زمني، ومن ثم فإنه يمكن لرئيس الجمهورية استعمال حقه في حل البرلمان عقب انتخابه متى توافرت الشروط المطلوبة دستوريا، غير أن الحل في هذه الحالة، قد يصبح سلاحا خطيرا ضد الرئيس نفسه وينقلب ضده، فاستعماله ضد برلمان معارض قد يجعل من الحل مسألة ثقة وهذا ما يجعل مستقبل الرئيس على المحك، فرفض الرئيس التعامل مع الأغلبية عن طريق الحل واللجوء إلى هيئة الناخبين لا يمنع هذه الأخيرة من معارضة رئيس الجمهورية في قراره وإعادة نفس الأغلبية، وفي هذه الحالة إذا لم يقدم الرئيس استقالته، سيضطر لخوض تجربة التعايش.

خامسا-أنواع الحل في النظام الدستوري الجزائري

لقد تطرق الدستور الجزائري لنوعين من الحل، وهما: الحل الرئاسي، والحل التلقائي أو الوجوبي.

١-الحل الرئاسي في النظام الدستوري الجزائري:

لرئيس الجمهورية في الجزائر سلطة حل المجلس الشعبي الوطني متى رأى ذلك مناسبا، وبلجونه لهذا الإجراء الخطير، من المفروض أن يكون قد حدد الأهداف التي يتوخاها من وضع حد للعهد التشريعي للمجلس الشعبي الوطني.

ويلجأ رئيس الجمهورية لحل المجلس الشعبي الوطني في حالات متنوعة، أهمها حالة وجود أغلبية معارضة في المجلس الشعبي الوطني تريد عرقلة مشروعات القوانين التي تقدمت بها الحكومة، أو الأوامر التشريعية الصادرة عن الرئيس، خاصة وأن هذه الوضعية تزداد تعقيدا في حالة ما إذا كان الوزير الأول لا ينتهي إلى الحزب الحائز على الأغلبية في المجلس. لذلك، يمكن القول أن الغاية من الحل الرئاسي الإرادي تكمن في إعطاء رئيس الجمهورية الحق في البحث عن أغلبية مريحة موائية له من شأنها أن تؤدي إلى استقرار الحكم، ومن ثمة منع الأزمات الحكومية المتكررة خاصة في حالة الحكومات الائتلافية.

وبعد تبني الدستور الجزائري لسنة ١٩٩٦ المعدل لنظام المجلسين فقد خول رئيس الجمهورية سلطة حل المجلس الشعبي الوطني وهو الغرفة الأولى للبرلمان، دون أن يمكنه من حل الغرفة الثانية وهي مجلس الأمة، حيث نص في المادة ١٥١ منه على أنه "يمكن رئيس الجمهورية أن يقرر حل المجلس الشعبي الوطني بعد استشارة رئيس مجلس الأمة ورئيس المجلس الشعبي الوطني ورئيس المحكمة الدستورية والوزير الأول أو رئيس الحكومة حسب الحالة. وتجرى هذه الانتخابات في أجل أقصاه ثلاثة أشهر، وإذا تعذر تنظيمها في هذا الأجل لأي سبب كان يمكن تمديد هذا الأجل لمدة أقصاها ثلاثة أشهر بعد أخذ رأي المحكمة الدستورية" (المرسوم الرئاسي رقم ٤٤٢-٢٠، ٢٠٢٠).

٢-الحل الوجوبي في النظام الدستوري الجزائري:

ويطلق عليه أيضا "الحل التلقائي"، ولقد ظهر هذا النوع من الحل بعد الحرب العالمية الثانية في العديد من الدراسات والمشاريع وأريد به أن يكون علاجا لعدم الاستقرار الحكومي الذي شهدته الجمهورية الثالثة في فرنسا، غير أن واضعي دستور ١٩٤٦ رفضوا الأخذ به باعتباره يمس بقدااسة المجلس المنتخب، إضافة إلى حرصهم على ألا يكون أي شيء آلي في السياسة (Albertini, 1978, p. 145)، ونفس الأمر بالنسبة للدستور الفرنسي لسنة ١٩٥٨ الذي لم ينص على الحل التلقائي للبرلمان أو أحد مجلسيه.

وبالرجوع للدستور الجزائري، فقد ورد النص على الحل الوجوبي للمجلس الشعبي الوطني عند عدم موافقته على مخطط عمل الحكومة الذي يقدمه الوزير الأول، أو برنامج الأغلبية البرلمانية الذي يقدمه رئيس الحكومة بعد عرضه عليه للمرة الثانية، فالمجلس في هذه الحالة ينحل وجوبا بقوة الدستور، وهذا وفقا لنص المادة ١٠٨ منه التي جاء في فقرتها الأولى ما يلي: "إذا لم تحصل موافقة المجلس الشعبي الوطني من جديد، يحل وجوبا".

وبذلك يكون المشرع الدستوري الجزائري قد جعل من الحل الوجوبي وسيلة لمواجهة تعسف المجلس الشعبي الوطني، في ممارسة سلطته الرقابية برفضه المتكرر لمخطط عمل الحكومة الذي يقدمه الوزير الأول، أو برنامج الأغلبية البرلمانية الذي يقدمه رئيس الحكومة، ومن ثم وضع سلطة موازية لسلطة المجلس الشعبي الوطني في سحب الثقة من الحكومة عن طريق التصويت على ملتصق الرقابة (هاملي، ٢٠١٤، صفحة ٨١).

والجدير بالذكر أن الدستور الجزائري لسنة ١٩٩٦ المعدل سنة ٢٠٢٠ لم ينص على آلية الحل الوجوبي بالنسبة للغرفة الثانية، والمتمثلة في مجلس الأمة، فهذا الأخير لا يمكن أن يتعرض للحل الوجوبي، نظرا إلى أن الدستور لم يخوله صلاحية منح ثقته للحكومة.

المحور الثاني: الجهة التي تملك حق الحل وفقا للتعديل الدستوري الجزائري لسنة ٢٠٢٠

في الجزائر سلطة الحل هي ملك لرئيس الجمهورية دون غيره، فهو بإمكانه الإطاحة بالهيئة التشريعية النابغة عن إرادة الشعب في الوقت الذي يفرض فيه الوضع السياسي والقانوني تواجدها، وهذا ما سنبينه من خلال ما يلي:

أولا- الحل سلطة خاصة لرئيس الجمهورية في الجزائر

سلطة الحل-في الجزائر- تعود لرئيس الجمهورية دون غيره، إذ بإمكانه الإطاحة بالهيئة التشريعية النابغة عن الشعب مباشرة، فحتى إذا كانت الحكومة هي من طلبت الحل، فإن هذه السلطة تظل ملكا لرئيس الجمهورية دون غيره، وحتى في حالة المانع المؤقت، أو خلو منصب رئيس الجمهورية فإنه يُمنع على من حل محل الرئيس وكذلك يمنع على رئيس الجمهورية المؤقت حل المجلس الشعبي الوطني، وهو ما نص عليه الدستور الجزائري في المادة ٩٦ منه، بقولها: "لا يمكن أن تقال أو تعدل الحكومة القائمة إبان حصول المانع لرئيس الجمهورية، أو وفاته، أو استقالته، حتى يشرع رئيس الجمهورية الجديد في ممارسة مهامه".

يستقيل الوزير الأول أو رئيس الحكومة، حسب الحالة، وجوبا إذا ترشح لرئاسة الجمهورية.

ويمارس وظيفة الوزير الأول أو رئيس الحكومة، حسب الحالة، حينئذ، أحد أعضاء الحكومة الذي يعينه رئيس الدولة. لا يمكن في الفترتين المنصوص عليهما في المادتين ٩٤ و ٩٥ أعلاه، تطبيق الأحكام المنصوص عليها في الحالتين ٨ و ٩ من المادة ٩١ والمواد 104 و 142 و 151 و ١٦٢ و ٢١٩ و ٢٢١ و ٢٢٢ من الدستور.

لا يمكن، خلال هاتين الفترتين، تطبيق أحكام المواد ٩٧ و ٩٨ و ٩٩ و 100 و 102 من الدستور إلا بموافقة البرلمان المنعقد بغرفتيه المجتمعيتين معاً، بعد استشارة المحكمة الدستورية والمجلس الأعلى للأمن".

٢- الحل سلطة تقديرية لرئيس الجمهورية في الجزائر:

لقد خول الدستور الجزائري لرئيس الجمهورية أن يقرر الحل بناء على ما يقدره، بمعنى أن تقدير الأحداث بشكل يبرر الحل متروك كله للسلطة التقديرية لرئيس الجمهورية، فإذا كان متأكدا من نجاحه عقب خلاف مع البرلمان، فإنه لن يتردد أبدا في استعمال حق الحل، أو ببساطة يلوح به، ومن ثمة فهو وحده من يضع النواب أمام الهيئة النابغة.

وتظهر السلطة التقديرية في الحل من خلال عدم خضوعها-حسب الدستور الجزائري- إلى أي شرط جوهري، فالمشرع الدستوري الجزائري يخول رئيس الجمهورية إصدار قرار بحل المجلس الشعبي الوطني دون أي قيود جديدة بالرغم من كونه

غير مسؤول سياسيا أمام المجلس النيابي، مما يُظهر الاختلال بين السلطات الممنوحة للرئيس وتلك الممنوحة للمجلس الشعبي الوطني.

وطالما أن المشرع الدستوري الجزائري قد جعل الحل من اختصاص رئيس الجمهورية دون غيره اختصاصا فعلياً، وهذا وفقاً لما ورد بالمادة ١٥١ من الدستور الجزائري لسنة ١٩٩٦ المعدّل، والتي ورد فيها العبارة التالية: "يمكن رئيس الجمهورية أن يقرر حل المجلس الشعبي الوطني..."، وبالتالي فهو ليس اختصاص شرقي كما في النظام البرلماني، لذلك نرى أنه كان لا بد من إسناد حق الحل لرئيس الحكومة باعتباره هو المسؤول سياسيا أمام المجلس الشعبي الوطني.

المحور الثالث: الضمانات الدستورية لعدم تعسف رئيس الجمهورية في استعمال حق الحل

نظراً للآثار التي تترتب على حل البرلمان، وحتى لا تتعسف السلطة التنفيذية في استعمال حقها في حل المجلس النيابي، وضع الدستور الجزائري ضمانات وقيود على السلطة التي تملك حق الحل (رئيس الجمهورية)، إذا أرادت اللجوء إلى حل البرلمان، فلم يترك الباب مفتوحاً أمامها دون أية ضوابط، وإنما ألزم رئيس الجمهورية بإتباع إجراءات معينة تكفل عدم إساءة استخدامه لهذا الحق، كما نص على حالات محددة يُمنع فيها حل البرلمان.

لذلك سنتناول بالدراسة في هذا المحور القيود التي أوردتها الدستور الجزائري على سلطة رئيس الجمهورية في حل المجلس الشعبي الوطني، كما سنتطرق إلى الحالات التي يُمنع فيها حل البرلمان، وذلك من خلال ما يلي:

أولاً: القيود الواردة على سلطة رئيس الجمهورية في حل المجلس الشعبي الوطني

بالرجوع لنص المادة ١٥١ من الدستور الجزائري، يتضح لنا أن سلطة رئيس الجمهورية في حل المجلس الشعبي الوطني - وهو الغرفة الأولى بالبرلمان الجزائري - مقيدة بإجراءين فقط، يتمثل الأول في إجراء الاستشارة، أما الإجراء الثاني فيتمثل في ضرورة تنظيم انتخابات تشريعية.

١- استشارة جهات محددة

قيّد الدستور الجزائري لسنة ١٩٩٦ المعدّل في المادة ١٥١ منه، رئيس الجمهورية قبل أن يقرر حل المجلس الشعبي الوطني استشارة رئيس مجلس الأمة، ورئيس المجلس الشعبي الوطني، ورئيس المحكمة الدستورية والوزير الأول. وتُعد هذه الاستشارة من الناحية النظرية ضماناً دستورية لحماية السلطة التشريعية من إمكانية الاستخدام التعسفي لحق حل المجلس الشعبي الوطني من طرف رئيس الجمهورية.

كما أن هذه الاستشارة إلزامية ومفروضة على رئيس الجمهورية، وليس له الحرية والخيار في القيام أو عدم القيام بها، بمعنى أنه لا يمكن للرئيس أن يحل المجلس الشعبي الوطني دون استيفاء شرط الاستشارة وإلا كان قراره غير دستوري. غير أنه، وبالرغم من أن هذه الاستشارة إلزامية، إلا أن رئيس الجمهورية غير ملزم بالآراء التي تبديها هذه الشخصيات، حيث أراد المشرع الدستوري الجزائري من خلالها حماية وحفظ مكانة رئيس الجمهورية من أي اتهام، فهي ستار للرئيس حتى لا تُوجه له أصابع الاتهام، باعتباره صاحب الحق في إصدار قرار الحل ولا يشاركه أي طرف في اتخاذه لهذا القرار (أومايوف، ٢٠١٣، صفحة ١٩١).

وعليه، وحتى ولو لم توافق كل الجهات التي استشارها رئيس الجمهورية على حل المجلس الشعبي الوطني، فإن الرأي الأخير يعود له، فهو الوحيد الذي يحق له إصدار مرسوم الحل. ومع ذلك، لا يمكن إنكار أن آراء هذه الشخصيات بالرغم من أنها غير ملزمة لرئيس الجمهورية إلا أنها تكتسي أهمية كبيرة، كونها تجنب الرئيس مخاطر التسرع والانفعال، وتكون دافعا له للعدول عن رغبته في الحل، مما يشكل ضماناً لعدم تعسف رئيس الجمهورية في استعمال حقه في حل المجلس التشريعي في الجزائر (Ardant، ٢٠٠٥، صفحة ٥٠٠).

٢- إجراء الانتخابات في أجل أقصاه ثلاثة أشهر

بعد إصدار رئيس الجمهورية لمرسوم الحل، لابد أن يتم الالتزام بإجراء انتخابات تشريعية في أجل أقصاه ثلاثة أشهر، وهذا وفقا لنص المادة ١٥١ من الدستور الجزائري لسنة ١٩٩٦ المعدل سنة ٢٠٢٠. ويعتبر تحديد المدة الزمنية التي يجب إجراء الانتخابات التشريعية خلالها بعد حل المجلس الشعبي الوطني بمثابة ضمان، الهدف منها عدم إطالة الفترة بين إنهاء المجلس الذي تم حله وانعقاد المجلس الجديد، وذلك حتى لا يتم استغلال فترة شغور المجلس الشعبي الوطني من قبل السلطة التنفيذية للتشريع بموجب أوامر، وهذه الضمانة تلعب دورا في استقرار المؤسسات الدستورية في الدولة.

ثانيا- موانع حل المجلس الشعبي الوطني الجزائري

تتمثل هذه الموانع في منع ممارسة سلطة حل المجلس الشعبي الوطني لمن يتولى منصب رئاسة الدولة بسبب شغور في منصب الرئاسة، وأيضا عدم جواز حل المجلس أثناء الحالة الاستثنائية وحالة الحرب.

١- منع ممارسة سلطة الحل لمن يتولى رئاسة الدولة في حالة شغور المنصب

أجاز الدستور الجزائري لرئيس الجمهورية في الجزائر ممارسة سلطة حل المجلس الشعبي الوطني، ولم يسمح بممارسة هذه السلطة ممن يتولى مهام رئاسة الدولة. حيث أكدت المادة ٩٦ من الدستور الجزائري، عدم إمكانية حل المجلس الشعبي الوطني ممن يتولى رئاسة الدولة في الحالتين التاليتين:

أ- حالة قيام مانع لرئيس الجمهورية أو استقالته أو وفاته

تنص المادة ٩٤ من الدستور الجزائري لسنة ١٩٩٦ المعدل على أن "إذا استحال على رئيس الجمهورية أن يمارس مهامه بسبب مرض خطير ومزمّن، تجتمع المحكمة الدستورية بقوة القانون، وبعد أن تتثبت من حقيقة هذا المانع بكل الوسائل الملائمة، تقترح بأغلبية ثلاثة أرباع (٤/٣) أعضائها على البرلمان التصريح بثبوت المانع. يُعلن البرلمان، المنعقد بغرفتيه المجتمعيتين معا، ثبوت المانع لرئيس الجمهورية بأغلبية ثلثي (٣/٢) أعضائه، ويكلف بتولي رئاسة الدولة بالنيابة مدة أقصاها خمسة وأربعون (٤٥) يوما، رئيس مجلس الأمة الذي يمارس صلاحياته مع مراعاة أحكام المادة ٩٦ من الدستور. في حالة استمرار المانع بعد انقضاء خمسة وأربعين (٤٥) يوما، يُعلن الشّغور بالاستقالة وجوبا حسب الإجراء المنصوص عليه في الفقرتين السابقتين وطبقا لأحكام الفقرات الآتية من هذه المادة. في حالة استقالة رئيس الجمهورية أو وفاته، تجتمع المحكمة الدستورية وجوبا وتثبت الشّغور النهائي لرئاسة الجمهورية. وتُبلغ فوراً شهادة التصريح بالشّغور النهائي إلى البرلمان الذي يجتمع وجوبا. يتولى رئيس مجلس الأمة مهام رئيس الدولة لمدة أقصاها تسعون (٩٠) يوما تنظم خلالها انتخابات رئاسية. وفي حالة استحالة إجراءاتها، يمكن تمديد هذا الأجل لمدة لا تتجاوز تسعين (٩٠) يوما، بعد أخذ رأي المحكمة الدستورية. لا يحقّ لرئيس الدولة المعين بهذه الطريقة أن يترشّح لرئاسة الجمهورية.

إذا اقترنت استقالة رئيس الجمهورية أو وفاته بشغور رئاسة مجلس الأمة، لأي سبب كان، تجتمع المحكمة الدستورية وجوبا، وتثبت بأغلبية ثلاثة أرباع (٤/٣) أعضائها الشّغور النهائي لرئاسة الجمهورية وحصول المانع لرئيس مجلس الأمة. وفي هذه الحالة، يتولى رئيس المحكمة الدستورية مهام رئيس الدولة. ويضطلع رئيس الدولة المعين حسب الشروط المبينة أعلاه بمهمة رئيس الدولة طبقا للشروط المحددة في الفقرات السابقة وفي المادة ٩٦ من الدستور. ولا يمكنه أن يترشّح لرئاسة الجمهورية".

كما تنص المادة ٩٦ من الدستور في فقرتها الثالثة على أن "لا يمكن في الفترتين المنصوص عليهما في المادتين ٩٤ و٩٥ أعلاه، تطبيق الأحكام المنصوص عليها في الحالتين ٨ و٩ من المادة ٩١ والمواد ١٠٤ و١٤٢ و١٥١ و١٦٢ و٢١٩ و٢٢١ و٢٢٢ من الدستور". من خلال هذين النصين الدستوريين يتضح لنا أنه لا يمكن لمن يتولى رئاسة الدولة بالنيابة لمدة أقصاها خمسة

وأربعون (٤٥) يوما بسبب ثبوت المانع لرئيس الجمهورية، أن يطبق أحكام المادة ١٥١ من الدستور، المتعلقة بحق أو سلطة حل البرلمان، بمعنى أنه لا يمكن لمن يتولى رئاسة الدولة بالنيابة -وهو رئيس مجلس الأمة أو رئيس المحكمة الدستورية، وذلك إذا اقترنت استقالة رئيس الجمهورية أو وفاته بشغور رئاسة مجلس الأمة- حل المجلس الشعبي الوطني. وكذلك لا يمكن لمن يتولى رئاسة الدولة في حالة استقالة رئيس الجمهورية أو وفاته، لمدة أقصاها تسعون (٩٠) يوما، التي تنظم خلالها الانتخابات الرئاسية، أو لمدة أقصاها ١٨٠ يوما في حالة تمديد المدة الأولى لاستحالة إجراء الانتخابات الرئاسية، أن يقوم بحل المجلس الشعبي الوطني.

ب- حالة وفاة أحد المترشحين للانتخابات الرئاسية في الدور الثاني أو تعرضه لمانع قانوني

تنص المادة ٩٥ من الدستور الجزائري لسنة ١٩٩٦ المعدّل سنة ٢٠٢٠- في فقرتها الثالثة-على أن " في حالة وفاة أحد المترشحين للدور الثاني أو تعرضه لمانع قانوني، تعلن المحكمة الدستورية وجوب إجراء كل العمليات الانتخابية من جديد، وتمدد في هذه الحالة آجال تنظيم انتخابات جديدة لمدة أقصاها ستون (٦٠) يوما". من خلال هذه المادة وكذلك الفقرة الثالثة من المادة ٩٦ من الدستور -المذكورة أعلاه- يتبين لنا أنه في حالة وفاة أحد المترشحين للانتخابات الرئاسية في الدور الثاني، أو تعرضه لمانع قانوني، فإنه لا يمكن لرئيس الدولة أن يقوم بممارسة سلطة حل المجلس الشعبي الوطني خلال الفترة الزمنية المحددة ب ستين (60) يوما. ولعل المغزى وراء منع من يتولى رئاسة الدولة من ممارسة سلطة حل المجلس الشعبي الوطني أن الذي يتولى رئاسة الدولة في حالة شغور منصب رئيس الجمهورية بسبب العجز أو الوفاة أو الاستقالة، غير منتخب، ومن ثم لا يعقل أن يقوم هذا الرئيس بحل مؤسسة منتخبة-وهي المجلس الشعبي الوطني-وظيفتها تمثيل إرادة الشعب، والتعبير عنها.

٢- عدم جواز حل المجلس الشعبي الوطني أثناء الحالة الاستثنائية وحالة الحرب

تنص المادة ٩٨ من الدستور الجزائري لسنة ١٩٩٦ المعدّل على أن " يقرّر رئيس الجمهورية الحالة الاستثنائية إذا كانت البلاد مهددة بخطر داهم يوشك أن يصيب مؤسساتها الدستورية أو استقلالها أو سلامة ترابها لمدة أقصاها ستون (٦٠) يوما. لا يتخذ مثل هذا الإجراء إلا بعد استشارة رئيس مجلس الأمة، ورئيس المجلس الشعبي الوطني، ورئيس المحكمة الدستورية، والاستماع إلى المجلس الأعلى للأمن ومجلس الوزراء. وتخول الحالة الاستثنائية رئيس الجمهورية اتخاذ الإجراءات الاستثنائية التي تستوجبها المحافظة على استقلال الأمة والمؤسسات الدستورية في الجمهورية. يوجّه رئيس الجمهورية في هذا الشأن خطابا للأمة. يجتمع البرلمان وجوبا.

لا يمكن تمديد مدة الحالة الاستثنائية إلا بعد موافقة أغلبية أعضاء غرفتي البرلمان المجتمعين معا. تنتهي الحالة الاستثنائية، حسب الأشكال والإجراءات السالفة الذكر التي أوجبت إعلانها. يعرض رئيس الجمهورية، بعد انقضاء مدة الحالة الاستثنائية، القرارات التي اتخذها أثناءها على المحكمة الدستورية لإبداء الرأي بشأنها".

كما تنص المادة ١٠٠ من الدستور المذكور على أن "إذا وقع عُدوان فعلي على البلاد أو يوشك أن يقع حسبما نصّت عليه الترتيبات الملزمة لميثاق الأمم المتحدة، يُعلن رئيس الجمهورية الحرب، بعد اجتماع مجلس الوزراء والاستماع إلى المجلس الأعلى للأمن واستشارة رئيس مجلس الأمة ورئيس المجلس الشعبي الوطني ورئيس المحكمة الدستورية. يجتمع البرلمان وجوبا. يوجّه رئيس الجمهورية خطابا للأمة يُعلنها بذلك".

بتفحصنا لهذين النصين الذين استوجبا اجتماع البرلمان خلال الحالة الاستثنائية، وأيضا في حالة الحرب، يتبين لنا عدم إمكانية قيام رئيس الجمهورية بممارسة سلطة الحل أثناء هذه الظروف الاستثنائية، لأن الاجتماع يكون بقوة القانون

مباشرة بعد تقرير الحالة الاستثنائية أو حالة الحرب، ودون انتظار الضوء الأخضر من أي جهة كانت (بوقرن، ٢٠١١، صفحة ١٥٦).

المحور الرابع: تطبيقات حق الحل واستعماله كأداة لتكريس تفوق السلطة التنفيذية
سنتناول في هذا المحور تطبيقات حق الحل في الجزائر في ظل التعديل الدستوري الجزائري لسنة ٢٠٢٠، وكذا استعمال هذا الحق كأداة لتكريس تفوق السلطة التنفيذية على السلطة التشريعية.

أولاً: تطبيقات حق الحل في ظل التعديل الدستوري الجزائري لسنة ٢٠٢٠
لقد أعلن رئيس الجمهورية في خطاب للأمة مساء يوم الخميس ١٨ فبراير سنة ٢٠٢١، والذي تم إذاعته بالمؤسسة العمومية للتلفزيون الجزائري، عن حل المجلس الشعبي الوطني الذي انتخب بتاريخ الرابع من شهر مايو سنة ٢٠١٧، وذلك دون أن يكمل مدته الدستورية، التي كان من المفروض أن تنتهي سنة ٢٠٢٢. وجاء في خطاب الرئيس "السيد: عبد المجيد تبون" ما يلي: "لقد قررت حل المجلس الشعبي الوطني الحالي وسنمر مباشرة من الآن إلى انتخابات خالية من المال الفاسد أو غير الفاسد، تفتح أبوابها للشباب، حتى يكون لهذه الفئة وزنها السياسي الذي يمكنها من اقتحام المؤسسات المنتخبة، وأكد أن الدولة ستعمل على مساعدة هؤلاء الشباب، خاصة في مجال خوض حملتهم الانتخابية التي ستتكفل بجزء كبير منها، وبهذه الكيفية نكون قد شرعنا في التغيير من خلال ضخ دم جديد في أجهزة الدولة وفي البرلمان الذي سيكون لسان وعين الشعب بصفة عامة، وأجدد التأكيد أن البرلمان سيُنتخب والمراقبة ستكون من طرف الهيئة المستقلة، ولن يتدخل فيها لا رؤساء البلديات ولا الولاة، وحتى رئيس الجمهورية لا يمكنه التدخل، وسنحاول بكل الوسائل لكيلا يبقى أي شك في مؤسساتنا" (<https://www.entv.dz>).

وبعد هذا الإعلان، أصدر رئيس الجمهورية المرسوم الرئاسي رقم ٢١-٧٧، المؤرخ في ٩ رجب عام ١٤٤٢ الموافق ٢١ فبراير سنة ٢٠٢١، يتضمن حل المجلس الشعبي الوطني، وذلك بعد استشارة كل رئيس مجلس الأمة ورئيس المجلس الشعبي الوطني ورئيس المحكمة الدستورية والوزير الأول.

واستند في ذلك إلى أحكام المادة ٩١-٧ من الدستور الجزائري لسنة ١٩٩٦ المعدل سنة ٢٠٢٠ التي تنص على أنه "يضطلع رئيس الجمهورية، بالإضافة إلى السلطات التي تخولها إياه صراحة أحكام أخرى في الدستور، بالسلطات والصلاحيات التالية: ٧...- يوقع المراسيم الرئاسية"، واستند أيضا إلى المادة ١٥١ - السالفة الذكر - من الدستور المذكور، والتي تسمح لرئيس الجمهورية بحل المجلس الشعبي الوطني.

وجاء في المادة الأولى من المرسوم الرئاسي المتضمن حل المجلس الشعبي الوطني ما يلي: "يحل المجلس الشعبي الوطني ابتداء من يوم ١٧ رجب عام ١٤٤٢ الموافق أول مارس سنة ٢٠٢١"، وحدد الرئيس يوم ١٢ حزيران/يونيو موعدا للانتخابات التشريعية المبكرة، وفي هذا التاريخ تم انتخاب أعضاء المجلس الشعبي الوطني الجديد للعهدة الممتدة من ٢٠٢١ إلى ٢٠٢٦. وتجدر الإشارة إلى أن حل الغرفة السفلى للبرلمان (المجلس الشعبي الوطني) الذي كان يطالب به أغلبية الشعب الجزائري، قد كان في الوقت ذاته - أحد الالتزامات الرئيسية التي تعهد بها الرئيس منذ كان مرشحا للرئاسيات، وتمسك بها بعدما أصبح رئيسا منتخبا بعد فوزه بالانتخابات الرئاسية التي أجريت بتاريخ ١٢ ديسمبر سنة ٢٠١٩، وتحصل فيها على ٤٩٤٧٥٢٣ صوت، أي أكثر من الأغلبية المطلقة من الأصوات المعبر عنها المقدرة ب ٨٥١٠٤١٥ صوت، أي بنسبة 58,13%) (<http://www.Conseil-constitutionnel.dz>).

وكان قد تأخر هذا القرار إلى ما بعد سنة ونصف من انتخاب رئيس الجمهورية، وذلك بسبب الظروف الطارئة وفي مقدمتها الجائحة الفيروسية (كوفيد ١٩) التي اجتاحت البلاد، وكذا الأزمة الصحية التي ألمت بالرئيس والتي نقل على إثرها الرئيس

الجزائري في ٢٨ تشرين الأول/أكتوبر ٢٠٢٠ للعلاج في إحدى المستشفيات الألمانية، وعاد إلى الجزائر في يوم الثلاثاء ٣٠ ديسمبر سنة ٢٠٢٠، وذلك بعد رحلة علاج دامت شهرين (https://www.entv.dz).

ثانياً: الحل أداة لتكريس تفوق السلطة التنفيذية على السلطة التشريعية في النظام الدستوري الجزائري عندما يقرر رئيس الجمهورية حل المجلس الشعبي الوطني الجزائري، فالأثر المباشر لذلك يكون انعدام الرقابة من طرف المجلس الشعبي الوطني المنحل على أعمال الحكومة، وإن كان مجلس الأمة يبقى محافظاً على دوره الرقابي الذي يقتصر على طرح الأسئلة، وتشكيل لجان تقصي الحقائق، إضافة إلى استجواب الحكومة في أية مسألة ذات أهمية وطنية وعن حال تطبيق القوانين، دون أن يمكنه أن يصوت على ملتمس رقابة ينصب على مسؤولية الحكومة، أي أنه لا يمكنه سحب الثقة من الحكومة وهو أهم وأخطر سلاح رقابي يمارسه البرلمان في مواجهة السلطة التنفيذية. أما بالنسبة للوظيفة التشريعية التي كان يمارسها البرلمان فإنها تتوقف تماماً خلال فترة الحل، باعتبار أن مجلس الأمة لا يمكنه التشريع بصفة منفردة، وذلك لأن التشريع عملية مشتركة بينه وبين المجلس الشعبي الوطني. وعليه أقر المشرع الدستوري الجزائري أن المهمة التشريعية في الجزائر يتولاها رئيس الجمهورية الذي بإمكانه التشريع بأوامر أثناء فترة الحل، وذلك طبقاً لنص المادة ١٤٢ من الدستور الجزائري لسنة ١٩٩٦ المعدل سنة ٢٠٢٠ التي خولت رئيس الجمهورية التشريع بأوامر في مسائل عاجلة في حالة شغور المجلس الشعبي الوطني، على أن يعرض هذه الأوامر على كل من المجلس الشعبي الوطني الجديد ومجلس الأمة في بداية الدورة القادمة للموافقة عليها.

الخاتمة

من خلال هذه الورقة البحثية توصلنا إلى النتائج التالية:

- يُعد قرار حل المجلس الشعبي الوطني اختصاص أصيل لرئيس الجمهورية يمارسه بنفسه دون إمكانية تفويضه لغيره، - إن حل المجلس الشعبي الوطني هو اختصاص تقديري لرئيس الجمهورية، إذ لم يقبده الدستور بأسباب معينة، حتى وإن كان المؤسس الدستوري قد أشار إلى سبب معين في نص المادة ١١١ من التعديل الدستوري لسنة ٢٠٢٠، إلا أنها حالة مذكورة على سبيل المثال لا الحصر، كما أنه لا يمكن في حالة شعور منصب رئيس الجمهورية اللجوء إلى سلطة الحل من قبل رئيس الدولة.

- خلال فترة الحل تتعطل مؤقتاً الحياة البرلمانية، فبصدور قرار الحل تنتهي المدة النيابية للمجلس القديم، وبذلك ينتج العزل الجماعي للنواب، ويدعو رئيس الجمهورية إلى انتخابات جديدة، والتي يجب أن تجرى خلال مدة محددة أقصاها ثلاثة أشهر.

- بعد إصدار رئيس الجمهورية مرسوم حل المجلس الشعبي الوطني، فإن هذا الأخير يتوقف عن أداء وظائفه التشريعية والرقابية،

- يترتب على إصدار مرسوم حل المجلس الشعبي الوطني ممارسة رئيس الجمهورية وظيفة التشريع عن طريق الأوامر لمدة أقصاها ٣ أشهر يتم خلالها إجراء انتخابات تشريعية.

- إذا طرأت بعض الظروف التي تحول دون إجراء الانتخابات التشريعية في أوانها فإن رئيس الجمهورية يحق له تأجيل الانتخابات التشريعية لمدة لا تتجاوز ٣ أشهر أخرى مع ضرورة أخذ رأي المحكمة الدستورية، إذ في هذه الحالة تطول مدة التشريع بأوامر، ويمكن أن تصل إلى ٦ أشهر يكون خلالها رئيس الجمهورية بمثابة المشرع الوحيد في الدولة.

ولذلك يمكننا القول أن الدستور الجزائري قد عمل على تقوية مركز رئيس الجمهورية، وجعله الثقل الحقيقي للسلطة، وهذا ما أدى إلى تفوق واضح للرئيس على المجلس الشعبي الوطني، الذي أصبح عرضة للحل في أي وقت ودون الحاجة إلى تسليب الرئيس لقراره بحل المجلس.

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Study Strategies, Mental Health, and Environmental Support: Exploring Key Factors in Students' Exam Preparation among Tourism Management Students in Politeknik Muadzam Shah

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Abstract

Examinations are a critical measure of students' academic progress and performance. Effective preparation for examinations often involves a combination of study strategies, psychological well-being, and moral support within the learning environment. This study investigates the key factors influencing exam preparation among Tourism Management students at Politeknik Muadzam Shah (PMS). Data were collected from 106 respondents via an online questionnaire and analyzed statistically using Statistical Package for the Social Sciences (SPSS). The findings reveal that practicing past exam questions is the most prevalent study strategy, as it enhances familiarity with exam formats and boosts confidence. From a psychological perspective, self-rewarding upon achieving learning goals emerged as the most frequently practiced motivational strategy. Regarding environmental factors, peer-based knowledge exchange and collaborative learning were identified as the most common support mechanisms. These results underscore the interconnection between study habits, psychological resilience, and peer support in enhancing exam preparedness. The insights gained from this study may guide educators and institutions in refining academic support systems to better promote students' academic success and overall well-being.

Keywords: Exam preparation, study strategies, psychological well-being, environmental and support system.

Introduction

Examinations remain the foundation of the educational system, serving as the primary means of assessing learners' knowledge, skills, and academic progress. They are a measure of educational achievement, as highlighted by Brown-Kramer (2021), who asserts that teaching effective strategies to students enhances a teacher's prospects for improving students' test performance. In the context of a highly competitive academic environment, the need for effective examination preparation is crucial. Education systems worldwide are addressing the development of effective study habits, critical thinking skills, and time management techniques to help students achieve academic success (Korte et al., 2015).

Effective preparation for examinations goes beyond mere rote memorization; it requires a comprehensive approach that encompasses understanding concepts, applying knowledge, and managing stress (Sethares & Asselin, 2021). Moreover, students can enhance their exam readiness by focusing on key preparatory factors, such as study habits and strategies, psychological and emotional well-being, and environmental support systems. Students' preparation for examinations is significantly influenced by their study habits and strategies.



For instance, Driessen et al. (2022) state that effective study techniques, such as organizing information through outlines and summaries, enhance comprehension and retention, ultimately leading to improved academic performance. Additionally, students' performance and overall well-being are strongly affected by their psychological and emotional preparedness for examinations (Yasmin, 2023). Furthermore, environmental and support systems play a crucial role in shaping students' exam preparation. A conducive study environment, free from auditory and visual distractions, enhances focus, improves learning efficiency, and positively impacts academic performance (Daskal et al., 2022).

The pressure to perform well in exams further underscores the critical role of preparation in a student's academic journey (Hunter & Lloyd, 2018). Schools and educators play a vital role in equipping students with structured curricula, practice materials, and guidance on effective study techniques (Stanton et al., 2015). Research demonstrates that students who engage in active learning strategies achieve better results than those who rely on passive study methods (Aquino, 2011). This highlights the importance of fostering a culture of active engagement and self-regulated learning to enhance academic performance. Additionally, examination preparation provides an opportunity for students to develop essential life skills, including discipline, resilience, and problem-solving (Rowell et al., 2023). These skills are invaluable as students transition into their professional lives, where the ability to manage stress and approach challenges with confidence is crucial. In conclusion, the multidimensional nature of examination preparation emphasizes its significance in shaping students' academic achievements and future professional success, empowering them to approach assessments with confidence and competence.

Literature Review

Study Habits and Strategies

Study habits and strategies have a significant impact on students' preparation for examinations (Desmarais & Baker, 2011). First and foremost, dedicating sufficient study time to each course allows students to engage deeply with the material, fostering a comprehensive understanding of the subject matter (Walck-Shannon et al., 2021). Students can enhance their understanding and retention of complex concepts by organizing and restructuring information through methods like creating outlines, diagrams, and summaries (Sethares & Asselin, 2021).

Setting clear goals and timelines for studying not only helps students manage their time more effectively but also fosters accountability and motivation to achieve those objectives (Gezer-Templeton et al., 2017). Additionally, understanding the exam's content and grading criteria allows students to focus their study efforts on the most relevant material, enhancing their preparation (Somuah et al., 2014). Visualizing potential test questions during study sessions promotes critical thinking and the practical application of knowledge, while practicing with past exams provides valuable insight into the format and style of questions (Rowell et al., 2020). Moreover, using techniques like flashcards to aid memorization helps reinforce key facts and supports long-term retention (Walck-Shannon et al., 2021). Together, these strategies form a structured and proactive approach to exam preparation, providing students with the necessary tools to approach their assessments with confidence and competence.



Psychological and Emotional Factors

Students' psychological and emotional readiness for examinations plays a crucial role in determining their performance and overall well-being (Akunna et al., 2022; Xie et al. 2019). Feeling confident about their exam readiness is crucial, as self-efficacy has been linked to better academic outcomes (Goyer et al., 2022). On the other hand, a good night's rest prior to an exam is equally important; studies indicate that adequate sleep enhances cognitive function and memory consolidation, which are vital for effective learning and recall during assessments (Scullin, 2018; Okano et al., 2019). Additionally, rewarding oneself upon reaching learning goals can serve as a motivational strategy, reinforcing positive study behaviours and promoting a sense of accomplishment (Gutierrez et al., 2016). This approach not only boosts morale but also encourages sustained effort in preparation. Furthermore, maintaining a high level of concentration during study sessions is vital, as it directly correlates with the ability to absorb and retain information effectively (Hurtado et al., 2019). Collectively, these psychological and emotional strategies create a supportive framework that enables students to approach their examinations with greater assurance and competence.

Environmental and Support Systems

A distraction-free study environment is crucial for effective exam preparation, and its importance is well-supported by research. Distractions, especially auditory and visual ones, can significantly impair cognitive functions such as memory and metacognition, which are vital for learning and performing well on exams. Beaman et al. (2014) emphasize that auditory distractions can hinder memory retrieval and the metacognitive processes needed to apply the information effectively. However, the reference "Pupils' Reading Distraction and Confidence" by Tana and Tantiado (2024), which primarily addresses reading distractions in home settings, does not directly support this claim and has therefore been excluded. Additionally, distractions can increase stress and anxiety, further obstructing students' ability to concentrate and retain information (Narad et al., 2013). As such, minimizing distractions is essential for optimizing study effectiveness and improving exam preparation.

Peer support plays a crucial role in enhancing exam preparation by fostering collaboration, which has been shown to improve understanding and retention of material. Studies indicate that students who engage in group study tend to perform better academically than those who study alone (Fakcharoenphol & Stelzer, 2014). Group study not only improves academic performance but also contributes to emotional support among peers, thereby alleviating stress and anxiety during challenging academic periods (Nordberg et al., 2021). Additionally, tutoring from knowledgeable individuals, particularly one-on-one sessions, can significantly enhance academic performance. Personalized tutoring, including High Dosage Tutoring (HDT), targets students' specific needs, reinforcing foundational knowledge and addressing individual challenges, ultimately improving both understanding and retention (Zhou et al., 2022).

Methodology

This study explores the factors influencing exam preparation among Tourism Management students at Politeknik Muadzam Shah, focusing on their study habits, psychological and emotional factors, and environmental support systems. A quantitative approach was adopted, utilizing an online questionnaire survey to gather relevant data. The sample included



106 students out of 194, achieving a 54% response rate. Ouellette (2024) considers 30% an acceptable online survey response rate, while Nulty (2008) argues that 50% or higher reflects successful engagement and strong data reliability. The sample size was determined following Roscoe's (1975) guideline, which recommends a range of 30 to 500 participants for meaningful analysis. The questionnaire, adopted from the University of Houston-Clear Lake (2023) and Sebesta & Bray Speth (2017), was divided into four sections: Demographic Profile, Study Habits and Strategies, Psychological and Emotional Factors, and Environmental Support Systems. A 5-point Likert scale was used in Sections B, C, and D to ensure precise responses. Convenience sampling was employed, and data collected were analyzed using the Statistical Package for the Social Sciences (SPSS) to derive meaningful insights.

Discussion

Demographic profile

The demographic information describing the gender, age and ethnicity have been obtained from Section A in the distributed questionnaires.

Table 1: Demographic Profile

	Item	Frequency	Percentage
Gender	Male	30	28.6%
	Female	76	71.4%
Age	18-20	98	92.5%
	20-21	5	4.7%
	22 and above	3	2.8%
Ethnic	Malay	98	92.4%
	Chinese	2	1.9%
	Indian	6	5.7%
	Bumiputra	0	0
	Others	0	0

This section demonstrates the demographic statistics of the respondents who participated in the study. Based on table 1, the total respondents are 106 and the data illustrates the frequency of the gender between male (n=30) and female (n=76). The percentage of males in this study is 28.6% while females is 71.4%. In terms of age, the majority of respondents are in the 18-20 age group, comprising 92.5% of the sample. This is followed by a small number of respondents in the 20-21 age group (4.7%), and an even smaller percentage of respondents who are 22 and above (2.8%), indicating that the sample is predominantly younger. For ethnicity, the overwhelming majority of respondents are Malay (92.4%), with much smaller percentages of Chinese (1.9%) and Indian (5.7%). There are no respondents from the Bumiputra or Other ethnic groups in this sample.

Study Habits and Strategies

This section demonstrates the habits and strategies used by the respondents in preparing themselves for examination. Section B consists of 7 items consisting of mean and standard



deviation based on five-point Likert Scale (1= strongly disagree, 2= disagree, 3= neutral, 4= agree and 5= strongly agree).

Table 2: Study Habits and Strategies

Statement	Mean	Std. Deviation
I devote sufficient study time to each of my courses.	3.94	0.96
When I study, I rearrange and organize the information to improve my learning (by making outlines, diagram, summaries, etc).	3.90	0.95
I set goals and a timeline for studying the material and I plan how to meet those goals on time.	3.88	0.93
I try to find out what the exam will cover and how the exam is to be graded.	4.08	0.85
I try to imagine possible test questions during my preparation for an exam.	4.11	0.93
I practice answering previous years exams.	4.28	0.94
When I study, I practice rehearse important facts in order to memorize them (for example, using flashcards).	3.98	1.03

Based on Table 2, the mean scores for seven items range from 3.90 to 4.28, indicating that most respondents agreed with the majority of the items in this section. The highest mean is for the item *"I practice answering previous years' exams"* with a mean score of 4.28, suggesting that students widely recognize the value of practicing past exams. This proactive approach demonstrates that they effectively use past papers to familiarize themselves with question formats and build confidence. Xu et al. (2021) support this finding, as their systematic review highlights that a significant majority of students use past exam questions as a key study strategy, recognizing its effectiveness in academic preparation. The standard deviation (SD=0.94) indicates some variability, showing that while most students practice extensively, a few may not consistently utilize this method.

The second-highest mean in this section is for the item *"I try to imagine possible test questions during my preparation for an exam"* (m=4.11). This highlights students' ability to anticipate potential exam questions, demonstrating critical thinking and engagement with the material. This practice promotes deeper comprehension and application of knowledge. This is supported by Williams and Wallace (2019) who found that critical thinking skills strongly predict exam performance, suggesting that students who anticipate possible test questions not only enhance their understanding but also improve their academic outcomes through



deeper analytical engagement. Although the mean score is high, the standard deviation ($SD=0.93$) suggests that some students may not use this strategy regularly.

The item *"I try to find out what the exam will cover and how the exam is to be graded"* has the third-highest mean in this section ($m=4.08$). This reflects students' awareness of exam content and grading criteria, indicating strategic preparation. Hedgepeth et al. (2023) found that students who actively seek to understand the components of their assessments, including content and grading rubrics, are more likely to achieve higher academic performance. This proactive approach to exam preparation fosters a deeper engagement with the material and enhances overall learning outcomes. The relatively low standard deviation ($SD=0.85$) suggests that most students are consistent in this practice, making it a shared priority across the group.

The following items scored moderately, with means ranging from 3.88 to 4.00. For example, the item *"When I study, I practice/rehearse important facts in order to memorize them"* has a mean score of 3.98 ($m=3.98$). This indicates that techniques like flashcards or repetition are commonly employed to aid memorization. Giordano et al. (2021) highlight the benefits of reviewing recorded class activities as a means of reinforcing learning. This practice aligns with the use of repetition and rehearsal techniques, as students often revisit material to solidify their understanding and retention. The strategic use of technology to facilitate this process further underscores the importance of rehearsal in academic success. However, the relatively high standard deviation ($SD=1.03$) suggests notable variability in how consistently students adopt this approach. Such differences may stem from individual study preferences, varying course requirements, or differing levels of familiarity with these techniques.

Students generally devote sufficient time to their courses, as reflected by the item *"I devote sufficient study time to each of my courses"* ($m=3.94$). This indicates that most students manage their time reasonably well across their subjects. For instance, Abdi et al. (2022) found that students who allocated more time to their studies exhibited better time management skills. Their research indicates that the ability to effectively manage study time is crucial for academic success, suggesting that students who devote sufficient time to their courses are likely to develop stronger time management capabilities. However, the standard deviation ($SD=0.96$) highlights variability, suggesting that while many students maintain effective time management, others may face challenges in balancing their study loads or allocating time equitably across different courses.

The item *"When I study, I rearrange and organize the information to improve my learning"* reflects a moderate engagement with strategies to reorganize information, with a mean score of 3.90 ($m=3.90$). Techniques such as creating outlines, diagrams, or summaries are commonly employed to enhance understanding and retention. For instance, Chen et al. (2017) found that the effectiveness of diagramming and summarizing tasks is influenced by the students' prior knowledge. However, this score indicates that while many students utilize these strategies, their application is inconsistent across individuals, potentially impacting overall learning effectiveness.



Lastly, the item *“I set goals and a timeline for studying the material and plan how to meet those goals on time”* has a mean score of 3.88 ($m=3.88$). This suggests that many students recognize the importance of clear objectives and structured schedules in their study routines. This is supported by Kanazawa (2020) that emphasizes that setting goals is essential for improving students' learning and motivation. The study suggests that when students engage in goal-setting before beginning their studies, they are more likely to remain focused and committed to their learning objectives. This supports the idea that structured planning and goal-setting are vital components of effective study habits. However, the standard deviation ($SD=0.93$) points to variability in how consistently students plan. Some students may lack the discipline or habits needed for structured preparation, leading to inefficiencies in their study processes or reliance on last-minute cramming.

Psychological and Emotional Factors

This section discusses the psychological and emotional factors influencing the respondents while preparing for their examinations. Below are four items with mean and standard deviation scores based on a five-point Likert scale.

Table 3: Psychological and Emotional Factors

Statement	Mean	Std. Deviation
I feel confident that I am prepared for the exam.	3.70	0.90
I usually get a good night's rest prior to a scheduled exam.	3.37	1.09
I reward myself when I reach a learning goal.	3.84	0.98
I am confident with the level of concentration I am able to maintain.	3.81	0.96

The highest mean score in this section is for the item *“I reward myself when I reach a learning goal”* with a mean score of 3.84 ($m=3.84$). This indicates that students generally engage in self-reward practices upon achieving learning objectives, reflecting a positive motivational strategy. This is supported by Liu et al. (2022) who indicate that immediate rewards can enhance intrinsic motivation, suggesting that students who reward themselves upon reaching learning milestones are likely to experience increased motivation and persistence in their academic endeavours. However, the standard deviation ($SD=0.98$) suggests that this practice is not consistently adopted by all students, potentially reducing its effectiveness as a reinforcement mechanism for some individuals.

Students also report confidence in their ability to concentrate, as indicated by the relatively high mean score of 3.81 ($m=3.81$) for the item *“I am confident with the level of concentration I am able to maintain.”* Khouja (2024) emphasizes that self-confidence plays a significant role in the performance of medical students. The study indicates that students who feel confident in their skills, including concentration, are more likely to succeed in their academic endeavours. This correlation suggests that the confidence reported by students regarding their concentration levels is likely to enhance their overall academic performance. Despite



this, the standard deviation ($SD=0.96$) highlights variability, suggesting that while many students are satisfied with their focus levels, others face challenges in maintaining concentration. This disparity may impact their efficiency in learning and overall academic performance.

Another key observation is the item *"I feel confident that I am prepared for the exam,"* which has a mean score of 3.70 ($m=3.70$). This score reflects that students generally feel adequately prepared for exams. This assertion is supported by Bauzon et al. (2021) who found a significant positive correlation between students' perceived preparedness and their exam outcomes. Their research indicates that students who believe they are well-prepared for exams tend to perform better, suggesting that confidence in preparedness is a key factor in academic success. This aligns with the mean score of 3.70, indicating that students feel sufficiently prepared. However, the standard deviation ($SD=0.90$) reveals some variability, indicating that while many students are confident in their exam preparation, a notable portion may feel less secure. This variability could be attributed to differences in study strategies, access to resources, or levels of preparedness.

The lowest mean score in this section is for the item *"I usually get a good night's rest prior to a scheduled exam"* with a mean score of 3.37 ($m=3.37$). This indicates that students only moderately prioritize getting adequate sleep before exams. Bouloukaki (2023) emphasizes that sleep quality and duration are crucial during exam periods. The study indicates that insufficient sleep can lead to fatigue, which adversely affects academic performance. This suggests that while students may recognize the importance of sleep, their actual practices may not align with this understanding, as indicated by the mean score of 3.37. The higher standard deviation ($SD=1.09$) reflects significant variability, suggesting that while some students make sleep a priority, others sacrifice rest due to stress, procrastination, or other commitments. Poor sleep hygiene among the latter group could negatively affect cognitive performance and exam outcomes.

Environment and Support Systems

This section examines the environmental and support systems that influence respondents' preparation for examinations. A conducive study environment and access to academic support play a crucial role in enhancing students' focus, motivation, and overall learning effectiveness. The analysis includes three items measuring respondents' study environment and support-seeking behaviours, with their respective mean and standard deviation scores based on a five-point Likert scale. The table provides descriptive statistics (mean and standard deviation) for three statements related to environment and support systems, likely gathered through a survey or questionnaire.

Table 4: Environment and Support Systems

Statement	Mean	Std. Deviation
I study in a place free from auditory and visual distractions.	3.67	1.11
If I don't understand something, I ask a friend or classmate for help.	4.25	0.82



If I don't understand something, I ask a tutor or another knowledgeable person for help.	4.11	0.90
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Based on Table 4, the magnitude of mean score range for three items ranging from 4.25 to 3.67 indicating most of the respondents agreed with the most of the items in this section analysis. The highest mean score in this section is item *"If I don't understand something, I ask a friend or classmate for help"* with a mean score of 4.25 ($m=4.25$) indicates that seeking help from peers or classmates is a common strategy for students when they face challenges in understanding. This is further supported by Aini et al. (2022) who found that 90% of students believe that collaborative learning strategies facilitate better understanding of the material. The study emphasizes that discussing and sharing knowledge with classmates enhances learning outcomes, reinforcing the notion that students are inclined to seek assistance from their peers when they struggle with understanding. The lower standard deviation of 0.82 ($SD=0.82$) indicates that responses are more consistent. Most students share a similar approach of relying on peers for clarification.

With a mean of 4.11, the item *"If I don't understand something, I ask a tutor or another knowledgeable person for help"* also reflects a strong tendency among students to seek help from a tutor or another knowledgeable person when they encounter difficulties. Dumitru (2024) found that academic support through tutoring significantly aids students in overcoming learning challenges. The study indicates that students who engage with tutors are better equipped to identify and adapt their learning strategies, which aligns with the idea that seeking help is a proactive approach to addressing difficulties in understanding. This strategy appears slightly less prevalent than asking peers, as reflected by the slightly lower mean compared to the second statement. The standard deviation of 0.90 ($SD=0.90$) suggests moderate variability in responses. While many students may frequently use this strategy, some may rely on it less often, possibly due to accessibility or preference for peer support.

The lowest mean score in this section is the item *"I study in a place free from auditory and visual distractions"* ($m=3.67$) suggests that most respondents moderately agree with this statement. This indicates that, on average, students somewhat prioritize studying in a distraction-free environment, though it is not a strong tendency across the group. This assertion is supported by Robinson et al. (2018) highlighting that filtering out auditory and visual distractions is essential for effective selective attention. Their study emphasizes that individuals, particularly younger students, may struggle with distractions, which can impact their ability to concentrate on academic tasks. This reinforces the notion that while students may moderately agree with the importance of studying in a distraction-free environment, the reality of managing such distractions can be challenging. However, the relatively high standard deviation of 1.11 ($SD=1.11$) suggests variability in responses. Some students might strongly agree that they study in distraction-free places, while others may not prioritize this factor at all.

Conclusion

This study examined the key factors influencing examination preparation among Tourism Management students at Politeknik Muadzam Shah (PMS), with a focus on study strategies,



psychological well-being, and environmental support. The findings indicate that practicing past exam questions is the most frequently employed study strategy, enabling students to familiarize themselves with question formats and enhance their confidence. In terms of psychological factors, self-rewarding after reaching learning goals emerged as a common motivational strategy, reinforcing positive study behaviors. Additionally, among environmental factors, seeking help from peers was identified as the most utilized support mechanism, highlighting the importance of collaborative learning in academic success.

Despite these positive study behaviors, challenges such as inconsistent sleep patterns, varying levels of concentration, and limited access to distraction-free study environments were noted. These findings underscore the necessity of a comprehensive approach to examination preparation, integrating structured study habits, psychological support, and a conducive learning environment. It is recommended that educational institutions and educators implement strategies to enhance students' self-regulated learning, promote stress management techniques, and foster supportive academic environments. By addressing these factors, students can improve their examination readiness, academic performance, and overall well-being, thereby equipping themselves with essential skills for future academic and professional endeavors.

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Reviving Tradition: Integrating Traditional Chinese Colors Into Contemporary Design

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Abstract

Traditional Chinese colors hold deep cultural, historical, and symbolic significance, yet their application in contemporary design remains underexplored. This study investigates the integration of traditional Chinese colors into modern design, examining their cultural resonance, consumer perceptions, and impact on design innovation. Employing a mixed-methods research approach, the study combines qualitative insights from expert interviews, field observations, and case studies with quantitative data from consumer and designer surveys. The research identifies key symbolic meanings associated with traditional Chinese colors, their historical applications, and the challenges faced in adapting them to contemporary aesthetics. The findings reveal that while traditional Chinese colors carry strong cultural associations, their modern application requires careful adaptation to maintain both cultural authenticity and aesthetic appeal. Designers and consumers recognize the value of these colors in evoking heritage and emotional connections, yet practical challenges such as market acceptance, design versatility, and global influence shape their usage. The study highlights how these colors contribute to innovation in fashion, interior, graphic, and product design, creating a bridge between historical significance and modern creative expression. Furthermore, the research develops practical strategies for designers seeking to incorporate traditional Chinese colors into contemporary design without compromising their cultural essence. The study emphasizes that an informed and contextually aware approach is necessary to sustain their relevance in modern design trends. By offering theoretical and applied insights, this study contributes to the broader discourse on cultural preservation and design evolution. Ultimately, it underscores the importance of balancing heritage and innovation, ensuring that traditional Chinese colors continue to inspire and shape contemporary aesthetics in a globalized world.

Keywords: Traditional Chinese colors, cultural symbolism, contemporary design, aesthetic adaptation, design innovation

Introduction

Global design trends include blending old and modern features. Amidst this trend, the possibility and ramifications of using traditional Chinese colours in modern design are unclear. Traditional Chinese colours have centuries-old connotations rooted in history, culture, and symbolism. Despite its cultural relevance, little research has examined their adaptation and integration into modern design. This research investigates cultural resonance and creativity by reconstructing traditional Chinese colours in modern design to fill this gap. First, there is a lack of understanding of the historical and cultural connotations of traditional Chinese colours, and second, there is little research on how to use them in contemporary design to foster innovation while preserving cultural authenticity.



This study explores the historical and cultural significance of traditional Chinese colours to reveal their symbolic meanings and contextual importance. It also seeks to understand designers' and consumers' views on using traditional Chinese colours in modern design items to assess market demand and acceptance. This research also examines how traditional Chinese colours affect design innovation and creativity in fashion, interior, graphic, and product design. This study examines the strategies and methods used to reconstruct and apply traditional Chinese colours in modern design practices to provide practical guidelines and recommendations for designers and practitioners seeking to incorporate cultural elements while fostering innovation and cultural authenticity. Global design trends have increasingly leaned towards the integration of ancient and modern elements, creating a fertile ground for innovation. However, the application of traditional Chinese colors in modern design presents a unique set of challenges and opportunities. These colors, with their rich historical, cultural, and symbolic significance, offer a profound connection to China's heritage but have been underexplored in the context of contemporary design (Pan & Wang, 2023). The problem statement underscores two main issues: the lack of comprehensive understanding regarding the historical and cultural connotations of these colors and the scarcity of research focused on their practical application in modern design to foster innovation while maintaining cultural authenticity.

The research aims to bridge this gap by investigating the historical and cultural significance of traditional Chinese colors, their symbolic meanings, and their contextual relevance (Ling, 2018). It seeks to understand the perceptions of designers and consumers towards the use of these colors in contemporary design items, gauging market demand and acceptance. Furthermore, the study explores the impact of traditional Chinese colors on design innovation and creativity across various domains, including fashion, interior, graphic, and product design. It also examines the strategies and methods employed to reconstruct and apply these traditional colors in modern design practices, aiming to offer practical guidelines and recommendations for designers and practitioners (Zhao & Yaacob, 2023). This endeavor aspires not only to foster innovation and cultural authenticity but also to contribute to the broader discourse on cultural preservation and the evolution of design practices in a global context. Chang and Wen (2013) explore how authenticity is perceived in culture-driven products, particularly within the Taiwanese creative and cultural industry. Their research underscores the importance of conveying cultural messages through design, highlighting the critical balance between cost, quality, and the delivery of cultural authenticity. This study parallels the challenges and opportunities in integrating traditional Chinese colors into modern design, emphasizing the consumer's role in perceiving and valuing authenticity (Chang & Wen, 2013).

Augello et al. (2016) delve into the relationship between contemporary cultures and design innovation, advocating for a culture-driven approach to innovation. Their examination of the fashion industry as a culture-intensive sector offers insights into leveraging cultural evolution for design innovation, which can be extrapolated to the discussion on traditional Chinese colors in modern design (Augello et al., 2016).



This research initiative is set against the backdrop of a global design trend that leans towards melding ancient elements with modern aesthetics. Traditional Chinese colors, embedded with centuries of history, culture, and symbolism, stand at the forefront of this trend, offering a unique palette that resonates with cultural depth yet remains underexplored in modern design contexts. By addressing these gaps, the study endeavors to offer practical guidelines for designers and practitioners, aiming to create a design ethos that not only honors tradition but also champions innovation and cultural authenticity.

The study has following objectives:

1. To explore the cultural and historical significance of traditional Chinese colours and their influence on contemporary design.
2. To investigate the perspectives of designers and consumers regarding the incorporation of traditional Chinese colours in modern design.
3. To assess the impact of traditional Chinese colours on design innovation and creativity across various disciplines
4. To improve cultural resonance and creativity by developing practical techniques and guidelines for rebuilding and using traditional Chinese colours in modern design.

Literature Review

Traditional Chinese colors possess deep historical and cultural significance, reflecting the profound cultural, philosophical, and aesthetic values that have shaped Chinese society over millennia. These colors are not merely decorative; they carry rich symbolic meanings and are deeply woven into the fabric of Chinese culture, influencing art, politics, and personal identity. The concept of traditional Chinese colors, often symbolizing cultural values, sociocultural condensers or philosophical ideals, originated a long time ago and became more than just decorative materials (Yejun Fu and others, 2017; Shi et al., 2021). Deeply based in ancient Chinese civilization, these colors underwent historical sedimentation and had become indispensable to ritual, art, and imperial symbolism (Peng Yong-xin, 2011). Each color exists in the form of derived natural color fit into the traditional Chinese world view (Shao-hua, 2005).

These colors are codified, along with the symbolism of them, in the 'Yijing,' or 'Book of Changes,' as black with water, red with fire, green with wood, white with metal, and yellow with earth (Yejun Fu, 2017). Each direction holds its color: The centre is yellow, a colour traditionally reserved for the emperor, signifying its sacred status in Chinese culture (Peng Yong-xin, 2011; Ronghuei Hwang, 2018) also black (or grey, a combination of black and white) represents the north, red the south, green the east and white the west. These elements relate to the Daoist and Confucian philosophies that emphasize universal balance, harmony (Su Jian-jun & Shao-hua, 2006, 2005).

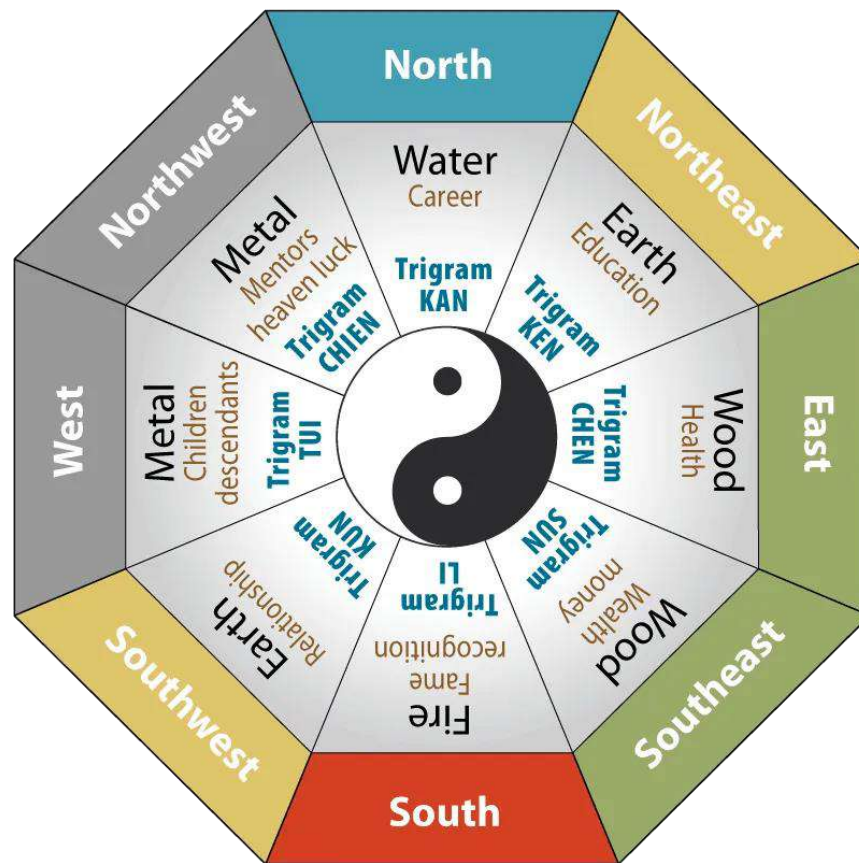


Figure 1 Five Elements of Chinese Philosophy

Traditionally, traditional Chinese colors have had symbolic significance in art and society, which were not only pleasing to the eyes, but also vehicles to spread moral, spiritual and philosophical meaning (Shi et al., 2021). While in painting color choices were imbued with particular meanings, and each hue was applied to designate rank and unit in a set of terracotta warriors (Ronghui Hwang 2018). Such colors also articulate the sophisticated ways in which Chinese society inscribed social values in everyday symbols to create a cultural landscape (Chen & Gu, 2023).

Acquiring stunning colors from traditional Chinese palette has become part of the key trend making the colors and artworks of the past resonates during the uniqueness of the modern people (Shan et al., 2022; Shu-hua, 2010). As an example, Shan, Jin, and Ding (2022) apply these colors with an improved AlexNet network: the traditional hues are captured well and suitable for contemporary use. Shi et al. (2021) also examine the inheritance of traditional Chinese colors within modern visual perception to demonstrate the adaptability and applicability of these colors to modern views. The recent applications presented are also reimagined, and represent adapting traditional Chinese colors in the context of the evolving yet permanent role they play in Chinese culture, as both culture bearers, bridging the past and present, and as a source for engaging cross-cultural appreciation (Su Jian-jun, 2006; Shi et al., 2021). Such ongoing tradition of adaptation to the modern world bolsters traditional Chinese colors in contributing to the global design

landscape, continuing to honor of previous precedents, which generate new forms for creative expression and cultural dialogue (Yejun Fu, 2017; Peng Yongxin, 2011).

The rich symbolism and aesthetic influence of Chinese tradition colors forms a deep touch in both of historical and contemporary art and design and serve as a reservoir for the impact on Chinese tradition colors on art and design (Meng, 2023). But with application and interpretation consisting of balancing cultural heritage with modern appeal, their application has gotten difficult. Colors are not used in traditional Chinese painting to create visual impact, but rather to convey deep emotional, philosophical and cultural values. An example of this symbolic use of color is how Chinese art embeds layers of meaning in a limited color scheme in systems such as Chinese ink painting in which colors vary, often up to an entire spectrum per base color, this also reenforces cultural beliefs as well as societal values (Hwang 2018; Nai-hui 2009). On the other hand, while these colours are used superficially by contemporary designers, they may have been lost their depth due to lack of awareness of the underlying spiritual and cultural meaning (Pan & Wang, 2023).

Chinese colors in the traditional sense are deliberately adopted in the field of graphic design to stimulate specific cultural sentiments, which sometimes does not avoid their true essence. The red symbolization or green symbolization for nature and renewal are widely used in advertising for its auspicious or green symbolism respectively, though this sort of selective application may trivialize the breadth of cultures that carry such symbolism (Yan Jin & Zhi Cao, 2014). For example, red can also mean good fortune or passion, but not as explicitly as commercial applications would have believe. Such an approach might weaken cultural resonance of traditional colors, so that they become merely marketing tools, losing their heritage value (Meng, 2023).



Figure 2 Chinese Dragon Graphic Design

To influence mood and energy, traditional Chinese colors have a particularly strong impact on architectural and interior design, and Feng Shui principles govern color choices. Yellow and blue in colors suggesting warmth and calm, respectively, reflect a historical idea that colors have psychological effect on well being (Zhang Xiaoqiang, 2008). But modern designers have liked to

use these colours to meet popular trends to make people remember, rather than to strengthen the cultural connect (Cheng Li-yan, 2007).

Traditional Chinese colors have profoundly influenced both historical and contemporary art and design, serving as a rich source of inspiration across various creative fields. These colors are not only aesthetically significant but also carry deep symbolic meanings that enhance the expressive power of artworks and designs. In traditional Chinese painting, colors are used to convey more than mere visual appeal; they express emotional states, philosophical ideas, and cultural values. The use of ink, for instance, goes beyond the black and white palette, as it encapsulates a range of greys that carry symbolic meanings. This nuanced use of colors reflects the deeply embedded cultural and spiritual beliefs of the society (Hwang, 2018). In contemporary design, traditional Chinese colors are utilized to infuse modern creations with cultural depth and historical continuity. The strategic use of these colors in graphic design, for example, can evoke specific cultural sentiments and connect with a broader audience. This is evident in the use of reds for their auspicious qualities and greens for their associations with nature and renewal, which are particularly prominent in advertising and brand design (Yan Jin & Zhi Cao, 2014).

Traditional Chinese colors play a significant role in architectural and interior design, where they are used to create environments that reflect cultural values and aesthetic preferences. The application of these colors follows the principles of Feng Shui, where color selection can influence the mood and energy of a space. For instance, yellow is often used in living areas to create a sense of warmth and welcome, while blue, associated with water, is used to promote calmness and relaxation (Zhang Xiao-qiang, 2008).



Figure 3 Landscape after Wang Ximeng (detail; 1947), Zhang Daqian



Figure 4 Gu Hongzhong (attr.), The Night Revels of Han Xizai, 10th century, handscroll, ink and colors on silk, Palace Museum, Beijing, China. Detail.

In fashion, traditional Chinese colors have inspired a variety of modern apparel designs that blend historical motifs with contemporary fashion trends. The rich palettes of imperial robes, for example, have influenced modern evening wear that utilizes bold colors like imperial yellow or phoenix red to convey luxury and elegance. This adaptation shows the versatility of traditional colors and their ability to transcend different eras and styles (Cheng Li-yan, 2007).

Theoretical Framework

The theoretical foundation of this study is informed by several key theories that provide a deep understanding of the cultural and aesthetic dimensions of traditional Chinese colors. These theories guide the analysis and interpretation of data, ensuring a comprehensive examination of how these colors can be effectively integrated into modern design.

Cultural Resonance Theory posits that cultural elements, such as traditional colors, evoke deep-seated cultural meanings and emotional responses. Integrating traditional Chinese colors into modern design aims to achieve cultural resonance, creating designs that blend contemporary and traditional sensibilities. This theory emphasizes the significance of cultural elements in shaping emotional and aesthetic experiences, suggesting that colors deeply rooted in cultural heritage can enhance the emotional impact and cultural relevance of modern design (Kotliar, 2022). By understanding and leveraging these cultural resonances, designers can create works that resonate more deeply with audiences, fostering a stronger connection to cultural heritage. Semiotic Theory explores the role of signs and symbols in communication, providing a framework for analyzing how traditional Chinese colors function as cultural symbols. This theory is crucial for



understanding the symbolic meanings embedded in these colors and their impact on design aesthetics and consumer perception. Semiotic analysis involves examining the cultural codes and symbolic meanings that colors carry, which can vary across different cultural contexts. By understanding these symbolic meanings, designers can create more culturally informed and meaningful designs (Sitnikova, 2021). This approach not only enhances the aesthetic value of the design but also ensures that it communicates effectively with its intended audience.

The study employs a transformative mixed methods design, integrating both qualitative and quantitative data to provide a comprehensive understanding of the research problem. This approach allows for the exploration of the convergence of cultural, aesthetic, and functional aspects of traditional Chinese colors in modern design. The transformative aspect of this design emphasizes the integration of diverse perspectives and methodologies, fostering a more holistic understanding of the research subject. This approach is particularly effective for addressing complex research questions that require multiple types of data and perspectives (Maleku et al., 2021). By combining quantitative data, such as survey results, with qualitative insights from interviews and case studies, the study ensures a thorough examination of the subject matter, revealing how traditional colors can be adapted and appreciated in modern design contexts. Influenced by Donald Schön's works on reflective practice in architecture and design, the study adopts an art-and-design-based approach. This emphasizes the importance of sketching and iterative design processes, fostering creativity and innovation as designers explore new applications of traditional colors in contemporary contexts. This approach values the role of intuition and experimentation in the design process, encouraging designers to engage deeply with traditional colors and discover new ways to integrate them into modern designs. By emphasizing reflective practice, this approach ensures that designers continually refine and improve their work, leading to more innovative and culturally resonant designs.

By employing these theoretical frameworks, the study aims to provide a nuanced and comprehensive analysis of how traditional Chinese colors can be effectively integrated into modern design. These theories offer valuable insights into the cultural, symbolic, and practical aspects of color use, guiding the research towards a deeper understanding of the intersection between tradition and modernity in design.

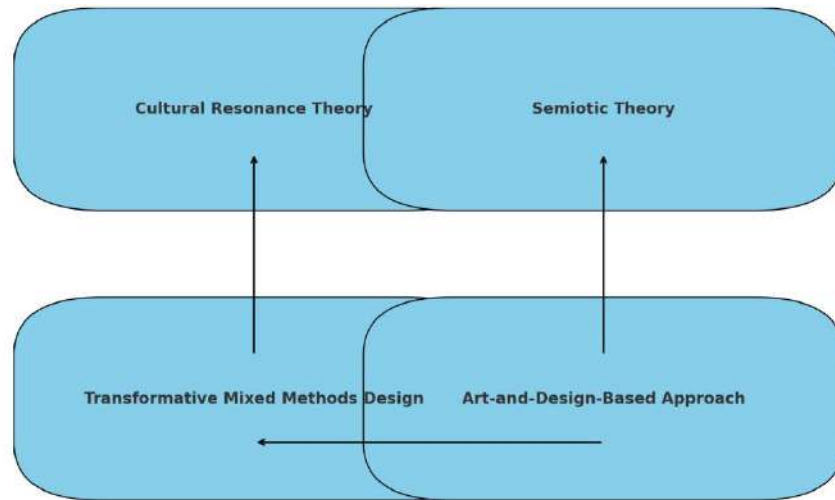


Figure 5: Theoretical Framework for Integrating Traditional Chinese Colors in Modern Design

Methodology

This study employs a mixed-methods research design that integrates both qualitative and quantitative approaches to explore the cultural significance and contemporary applications of traditional Chinese colors in modern design. The qualitative aspect involves in-depth interviews with historians, art curators, cultural scholars, and designers, as well as field research in museums and cultural sites to observe traditional color usage in historical artifacts. Case studies and visual documentation provide further insights into how these colors are applied in modern design contexts. The quantitative component includes structured surveys with Likert scale and multiple-choice questions targeting designers and consumers to assess attitudes, preferences, and perceptions of traditional Chinese colors in contemporary applications. This combination allows for a balanced analysis that captures both subjective expert insights and objective consumer trends, ensuring a comprehensive understanding of the topic.

The study follows a systematic data collection process that includes literature review, field observations, expert interviews, consumer surveys, and comparative analysis of historical and modern color palettes. The literature review examines historical texts, ancient artifacts, and prior research on Chinese color symbolism, setting the theoretical foundation for the study. Field research involves direct observations in museums and architectural sites to document color applications in cultural contexts. Interviews with cultural scholars and designers provide deeper insights into the historical significance and practical challenges of incorporating traditional colors into modern design. Consumer surveys, distributed online, collect quantifiable data on public perceptions, while comparative analysis explores how traditional Chinese colors have evolved over time and adapted to global design influences. By using purposive, snowball, and stratified random sampling, the study ensures a representative and diverse participant pool.

For data analysis, the study applies thematic analysis for qualitative data, identifying recurring themes related to cultural symbolism and design adaptation. Quantitative data from surveys are processed using descriptive statistics, cross-tabulations, and Chi-square tests to identify trends



and correlations between demographic factors and color preferences. Visual analysis of design case studies helps examine how traditional colors are integrated into modern branding, fashion, interior design, and product aesthetics. To enhance reliability and validity, the study ensures methodological consistency, data triangulation, and expert validation of research instruments. Ethical considerations, such as informed consent, cultural sensitivity, and confidentiality, are strictly followed to maintain the integrity of the research. This methodological framework provides a comprehensive and rigorous approach to understanding the evolving role of traditional Chinese colors in contemporary design.

Conclusion

The findings of this study highlight the enduring significance of traditional Chinese colors and their potential for integration into contemporary design across various disciplines, including fashion, interior, graphic, and product design. By examining their historical and cultural symbolism, the research underscores how these colors have shaped Chinese aesthetics and continue to evoke deep cultural meanings. The study also reveals that while designers and consumers acknowledge the importance of preserving traditional color symbolism, challenges exist in maintaining cultural authenticity while adapting these colors to modern trends. Through a combination of qualitative and quantitative analyses, the study demonstrates that traditional Chinese colors can enhance creativity and innovation in contemporary design when applied thoughtfully, balancing historical significance with modern aesthetics. The research also provides insights into market acceptance and consumer preferences, highlighting the importance of cultural resonance in fostering emotional connections with design.

This study contributes to the broader discourse on cultural preservation and design innovation by offering practical guidelines for integrating traditional Chinese colors into contemporary design. By employing a mixed-methods approach, the research bridges the gap between theoretical understanding and practical application, offering strategies for designers to create culturally enriched and aesthetically appealing works. The findings emphasize that traditional colors should not merely be aesthetic choices but should be understood in their historical and cultural contexts to preserve their symbolic meaning and authenticity. As globalization continues to influence design trends, this study underscores the importance of maintaining cultural identity while embracing innovation. Ultimately, this research serves as a valuable resource for designers, scholars, and cultural practitioners seeking to honor traditional Chinese colors in modern creative practices, ensuring that their legacy remains relevant in contemporary design landscapes.

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تحديد جنس المولود بعملية التلقيح الصناعي

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الملخص

تهدف الورقة إلى بيان حكم تحديد جنس المولود بعملية التلقيح الصناعي؛ إذ مع تطور الطب اكتشفت طرق أخرى حديثة لذلك، ولكن لها محاذير بيولوجية تتمثل في طرق حفظ النطف واحتمال تعرضها للاختلاط المؤدي إلى اختلاط الأنساب، وتستلزم كشف العورة، ومن هنا فقد جاءت هذه الورقة للإجابة على الأسئلة الآتية: ما الطرق لتحديد جنس المولود؟ وما حكم طرق تحديد جنس المولود؟ وما حكم كشف العورة لاختيار جنس الجنين بالطريقة المخبرية؟ وجعلنا الورقة عبارة عن تمهيد ومبحثين نذكر في التمهيد تعريفا بطرق تحديد الجنس القديمة والحديثة، ونعرض في المبحث الأول للحكم الشرعي لصور تحديد جنس المولود، وحكم كشف العورة لذلك، وفي المبحث الثاني رؤية فقهية ومقاصدية لحكم اختيار جنس الجنين وتوصلنا إلى نتائج لعل من أهمها: توجد طرق طبيعية ومخبرية لاختيار جنس الجنين، ولكل من الطريقتين إيجابيات وسلبيات، ولكن الأسهل الطريقة المخبرية وقد اختلف في صحتها الفقهاء والبحث يميل إلى الجواز لاعتبارات مقاصدية.

الكلمات المفتاحية: الجنس- التلقيح الصناعي- التلقيح المخبري- الجنين

مقدمة

بسم الله الرحمن الرحيم، الحمد لله رب العالمين، والصلاة والسلام على النبي الأمين، وعلى آله وصحبه أجمعين وبعد: مشكلة البحث: يقرر العلماء والباحثون وجود طرق طبيعية لاختيار جنس الجنين، ولكن مع تطور الطب اكتشفت طرق أخرى حديثة تمتاز باليسر والسهولة، لكنها تستلزم بطبيعة الحال كشف العورة مع مخاطر بيولوجية أخرى كطرق حفظ النطف، واحتمالية اختلاطها التي يترتب عليها اختلاط الأنساب المحظور شرعا، وهذا ما يجعل الطريقة محلا للنظر الفقهي.

أسئلة البحث: محور الأسئلة التي يدور عليها البحث ما حكم تحديد الجنس؟ ومع حرمة كشف العورة الثابتة بالنص والمتفق عليها بين علماء الأمة هل يسوغ كشفها لاختيار جنس الجنين بالطريقة المخبرية؟ وما الحاجة أو الضرورة التي يمكن أن تبيح المحظور؟

هدف البحث:

- الوصول إلى الحكم الشرعي الدقيق لتحديد جنس الجنين بعملية التلقيح الصناعي أو ما يسمى بأطفال الأنابيب.
- تحصيل مهارة تحقيق مناط الحكم الشرعي من خلال المزاوجة بين الأبحاث الشرعية والأبحاث الطبية
- تلبية حاجة المكتبة الشرعية بالأبحاث المتعلقة بالنوازل المعاصرة خصوصا في مجال الطب.

أهمية البحث: علم الطب في تطور مستمر، وتطوره يفتح آفاقا لإعادة النظر في جملة من الطرق البديلة لسد حاجات الناس وتلبية متطلباتهم، ومن أهمها الحصول على الذرية الطبية السليمة الخالية من الأمراض من خلال تحديد الجنس بعملية التلقيح المخبري، وهو ما يقتضي مواكبة فقهية لتلك التطورات الطبية.

كثرت في الآونة الأخيرة مراكز التلقيح المخبري، وربما دخلت في معادلة العرض والطلب التي لا أخلاق لها ولا شريعة، فكان لزاما وجود أنظمة وقوانين ولوائح تحكم عمل هذه المراكز وفق الضوابط والمبادئ التي أقرتها الشريعة الغراء والتي تنطلق من الحكم الشرعي لها ابتداء.

فإن الفقهاء الأوائل قد استفرغوا جهدهم في تبين الأحكام الفقهية المتعلقة بأفعال العباد وأحوالهم، ولما كانت قضايا الناس متجددة حسب الأحوال والعصور والبلدان التي يعيشون فيها فإن من الواجب على فقهاء هذا العصر أن يستفرغوا جهودهم في تنزيل الأحكام الفقهية على القضايا الفقهية المعاصرة المتعلقة بجوانب الحياة كلها سواء المعاملات أو الاجتماعيات أو الجوانب الصحية.

وفي هذه الورقة يحاول الباحث تنزيل الحكم الشرعي على قضية نازلة حديثة اقتضتها أحوال الناس في هذا العصر، وذلك بعد أن تطور علم الطب ليستطيع الوصول إلى حلول وعلاجات تتعلق بكثير من الأمراض أو الأحوال غير الطبيعية في الإنسان.

علما أن اختيار جنس الجنين ليس جديدا، بل هو مذكور في الكتب القديمة الفقهية وغيرها، ولذلك تم تقسيم المسألة إلى طرق طبيعية، لا تتطلب عملا طبيا، وإنما تكون من خلال اتباع حمية غذائية محددة، مع تناول بعض المحفزات واختيار مواعيد العلاقة الزوجية بأزمة خاصة ترجح حصول التلقيح بالجنس المطلوب.

أما الطرق غير الطبيعية فيقصد بها عملية التلقيح المخبري التي يجري بها تلقيح البويضة إما داخليا من خلال غرس الحيوان المنوي الذكري، أو خارجيا من خلال تلقيح البويضة في أنبوب مختبري بالحيوان المنوي المسؤول عن الذكورة، ثم إعادة غرسها في رحم المرأة.

إن عملية التلقيح المخبري - محل البحث- قد استجذبت في العقود الأخيرة لعلاج قضية قد امتحن الناس بها في الأزمان الماضية وهي قضيه العقم، والحمد لله فإن الطب قد وصل إلى مراحل متقدمة في علاج هذه القضية وذلك من فضل الله تعالى ونعمته، ولكن بقي أن جملة من الناس قد احتاجوا إلى التلقيح المخبري من غير حالة العقم مما هو من جنس الضرورة أو غير الضرورة لاختيار جنس الجنين لدواعي متعددة.

قسمت هذه الورقة الدواعي إلى قسمين

أولا: الدواعي الطبية

تندرج تحتها عدة صور بعضها يرقى للضرورة وبعضها لما هو دون ذلك مما يقارب الضرورة بناء على القاعدة أن الحاجة تنزل منزلة الضرورة، فمن الحالات المندرجة تحت هذه الدواعي: قدر الفقهاء حالة العقم وعلاج عدم الإنجاب بشروط وحيثيات محددة، بعد إجراء جملة من الفحوص تحدد إمكانية نجاح العملية من عدمها، ومن حالات الضرر. ومن الصور تفادي الأمراض الوراثية التي قد اتفق الطب على أنها تصيب جنسا محددا من الجنسين، وذلك بعد أن تمكن الطب من

خلال عملية التلقيح المخبري تحديد الحيوانات المنوية السليمة وعزل المصابة، ثم تلقيح البيضة بالحيوان المنوي من الجنس السليم وذلك تفادياً لهذه الأمراض التي تنتج عنها المشقة البالغة على الوالدين وعلى المولود لاحقاً. ومن الدواعي التي يمكن إدراجها تحت الداعي الطبي الحالات التي يخاف فيها من فقدان الخصوبة وذلك لكبر سن تخاف المرأة فقدان خصوبتها فتذهب إلى استخراج جملة من البيضات وتجميدها محافظة عليها لتلقيحها مستقبلاً، وهذه الحالة قد تكون المرأة متزوجة متأخرة أو أنها غير متزوجة ولكن تخاف أن يفوتها القطار، فتلجأ لتجميد البيضات على أمل أن تتزوج فيتم تلقيحها من نطف زوجها.

ومن الدواعي الطبية التي طلب الناس اختيار جنس الجنين لأجلها حاجتهم إلى جنس آخر فبعض الناس قد امتن الله تعالى عليهم بمجموعة من الإناث وبطبيعة الحال فإن الرجل يرغب في من يحمل نسبه ويكون عقباً له بعد ذلك فيطلب جنس الذكر بعملية التلقيح المخبري، وهذه لها شاهد من القرآن الكريم ذلك أن نبينا زكريا عليه وعلى نبينا الصلاة والسلام قد طلب من الله سبحانه وتعالى وريثاً وهذا الوريث ذكر، وهذا من باب دلالة الإشارة، والقاعدة أن ما يجوز طلبه والدعاء به يجوز السعي والتسبب لأجله فكان دليلاً على أن الحاجة إلى الوريث حاجة معتبرة شرعاً تندرج تحت قاعدة الحاجة الشرعية

ثانياً: الدواعي الاجتماعية

كطلب الرفاه بأن يطلب المزاوجة بين الجنسين، أو أن الله قد أكرمهم بعدة أبناء وبنات ثم يرغبون في جنس محدد، فهذه الصور لا ترقى للحاجة المعتبرة شرعاً، بل هي مما يدخل في النهي عن تفضيل جنس على آخر. وقد اختلف الفقهاء في عملية التلقيح المخبري وخلص المجمع الفقهي إلى أن الصور المعروفة الآن في هذه الأيام للتلقيح المخبري هي سبعة، وقرر ما يلي:

أولاً: الطرق الخمسة التالية محرمة شرعاً،

وممنوعة منعاً باتاً لذاتها، أو لما يترتب عليها من اختلاط الأنساب، وضياح الأمومة، وغير ذلك من المحاذير الشرعية وهي: الأولى: أن يجري التلقيح بين نطفة مأخوذة من زوج وبيضة مأخوذة من امرأة ليست زوجته، ثم تزرع تلك اللقحة في رحم زوجته.

الثانية: أن يجري التلقيح بين نطفة رجل غير الزوج وبيضة الزوجة، ثم تزرع تلك اللقحة في رحم الزوجة.

الثالثة: أن يجري تلقيح خارجي بين بذرتي زوجين ثم تزرع اللقحة في رحم امرأة متطوعة بحملها.

الرابعة: أن يجري تلقيح خارجي بين بذرتي رجل أجنبي وبيضة امرأة أجنبية وتزرع اللقحة في رحم الزوجة.

الخامسة: أن يجري تلقيح خارجي بين بذرتي زوجين ثم تزرع اللقحة في رحم الزوجة الأخرى.

ثانيًا: الطريقتان السادسة والسابعة

لا حرج من اللجوء إليهما عند الحاجة، مع التأكيد على ضرورة أخذ كل الاحتياطات اللازمة، وهما: السادسة: أن تؤخذ نطفة من زوج وببيضة من زوجته، ويتم التلقيح خارجيًا، ثم تزرع اللقيحة في رحم الزوجة. السابعة: أن تؤخذ بذرة الزوج وتحقن في الموضع المناسب من مهبل زوجته أو رحمها تلقيحًا داخليًا والله أعلم^١.

واختيار جنس الجنين حكمه مرتبط بالحاجة للعملية التي قيدها بعض الفقهاء بالضرورة، ويندرج تحتها الحاجة فإن كانت معتبرة فلا مانع منه وإلا فالأصل عدم الجواز، والحاجة التي تم تقييد الطريقتين الجائزتين بها ضابطها أن تكون معتبرة شرعا حتى تصل للمرتبة التي تنزلها منزلة الضرورة، والداعي لذلك هو ما تتطلبه العملية من كشف للعورة، وكشف العورة مما يحرم في الشريعة، ولا يسقط هذا التحريم إلا لضرورة أو حاجة شرعية معتبرة كما قال الشافعي: وليس يحل بالحاجة محرم إلا في الضرورات، ومن ضوابط الحاجة في هذا السياق:

- ١- أن يكون الغرض مباحا شرعا، ويحقق مصلحة معتبرة، وليس مجرد ترفيه
- ٢- أن تكون الحاجة حقيقية وليس موهومة، ولذلك لا بد من إجراء فحوصات تبين حقيقة الحال، وعدم إمكانية الحمل الطبيعي، ولا فلا تكون معتبرة.
- ٣- أن تكون المصلحة مظنونة ظنا غالبا، وهذا يتبين بالفحص وكلام الطب فإن لم يكن ثمة مرض وراثي فلا يصح، أو إن كانت نتيجة الكشوفات أنه لا يمكن تحصيل الحمل نطلقا أو بالجنس المختار فلا يصح لها تعريض فرجه لمن لا يحل له دون ظن غالب للمصلحة المرجوة
- ٤- والحاجة تقدر بقدرها فلا بد من التدرج في البحث عن طيبة فإن لم توجد فامرأة فإن لم توجد فطبيب مسلم فإن لم يوجد فكافر، بهذا التدرج، مع حضور المحرم حالة الطبيب الذكر، ثم لا يكشف من العورة إلا بقدر المطلوب دون زيادة.

وفي الختام فإن الورقة توصي بالآتي:

- إعادة طرح القضية في المجالس الفقهية للمحاولة للوصول إلى ضابط دقيق للحاجة المعتبرة شرعا والتي لأجلها تباح العملية، والحالات التي لا تصح فيها، لأن المراكز القائمة على هذا النشاط مؤسسات ربحية ترغب في التوسع.
- تقترح الورقة إجبار المراكز المعنية بالتلقيح المخبري بتعيين هيئات شرعية توجه دفة أنشطتها بما يتوافق مع الضوابط الشرعية

وصلى الله وسلم على سيدنا محمد وعلى آله وسلم

^١ مجمع الفقه الإسلامي - الدورة الثالثة - العدد الثالث - الجزء الأول، ص. ٢٣٤

ميزان النظام الاقتصادي الإسلامي وضمانات الرزق في الإسلام

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الملخص

النظام الاقتصادي الإسلامي مبني على الإنتاج والتوزيع اللذان بهما تتحقق التنمية المستدامة، وضمان العيش الكريم والرفاهية للمجتمع من خلال تيسير سبل الحياة في توازن واستقرار اقتصادي واجتماعي. انطلاقاً من هذه الخلفية تهدف هذه الدراسة إلى إبراز ميزان الاقتصاد الإسلامي، وضمانات الرزق من خلال النصوص والقواعد الشرعية. ومن ثم فإن مشكلة الدراسة تكمن في غياب التوازن في النظام الاقتصادي العالمي، وسوء استخدام الموارد الاقتصادية، وسوء التوزيع وإعادة التوزيع، وفقدان الاستقامة والإخلاص في المعاملات. وتتأسس هذه الدراسة على ثلاثة مباحث: المبحث الأول: مفهوم النظام الاقتصادي الإسلامي، المبحث الثاني: ميزان النظام الاقتصادي الإسلامي، المبحث الثالث: ضمانات الرزق في الإسلام. وقد اعتمدت الدراسة على المنهج الوصفي التحليلي المبني على جمع البيانات من مصادرها، وتصنيفها وفق خطة الدراسة، ثم تحليلها ومناقشتها مناقشة نقدية قصد تحقيق أهداف البحث ونتائج المتوقعة. وخلص البحث إلى أنّ ميزان النظام الاقتصادي الإسلامي هو العمل المنتج من أجل تحقيق التنمية، والإنفاق من أجل التمكين وضمان حد الكفاية لجميع أفراد المجتمع. كما خُصص البحث إلى أنّ الإسلام قدّم ضمانات عدّة للرزق، مثل: التقوى، الاستقامة، الاستغفار، التوكل، والإخلاص في العمل، شكر النعمة، وصلة الأرحام.

الكلمات المفتاحية: ميزان، النظام الاقتصادي الإسلامي، ضمانات الرزق.

مقدمة

النظام الاقتصادي الإسلامي نظام يسترشد بهدي الكتاب والسنة، مبني على الكسب والإنفاق من أجل تحقيق التنمية المستدامة وضمان العيش الكريم والرفاهية للمجتمع، في توازن واستقرار اقتصادي واجتماعي منبثق من الاستغلال الأمثل للموارد وعدالة توزيع الثروات والدخول. فهو نظام يسائر الفطرة البشرية؛ لأنه موجه بالعقيدة والأخلاق الإسلامية.

مشكلة البحث

تكمن مشكلة البحث في غياب التوازن في النظام الاقتصادي العالمي، وسوء استخدام الموارد الاقتصادية، وفقدان عدالة التوزيع للثروات والدخول، وإهمال جانب العقيدة والأخلاق في تصرفات الناس المالية والاقتصادية. ويسعى البحث لحل هذه الإشكالية من خلال تحقيق الأهداف التالية:

أهداف البحث

١. بيان مفهوم النظام الاقتصادي الإسلامي.
٢. توضيح ميزان الاقتصاد الإسلامي.
٣. تحليل كفاءة الوصول إلى الإنتاج الأمثل في الاقتصاد الإسلامي.
٤. إظهار الفرق بين الكسب والإنتاج.
٥. بيان علاقة الإنفاق والتوزيع بالكسب والإنتاج.

٦. بيان كيف يكون الإنفاق استثماراً دنيوياً وأخروياً.

٧. الكشف عن ضمانات الرزق في الإسلام.

منهج البحث

نظراً لطبيعة هذا البحث فإنه يعتمد على المنهج الوصفي والتحليلي، من حيث الرجوع إلى المصادر المختلفة لجمع البيانات العلمية ثم تصنيفها وفق خطة الدراسة، وتحليلها ومناقشتها قصد تحقيق أهداف المبحث.

الدراسات السابقة

لم أقف على بحث متخصص في موضوع هذه الدراسة، ولكن هناك كتب ودراسات عديدة في الاقتصاد الإسلامي استفادت منها هذه الدراسة فيما سميناه بميزان الاقتصاد الإسلامي، كما اعتمدت هذه الدراسة في تحديد ضمانات الرزق في الإسلام على القرآن الكريم والأحاديث النبوية الشريفة. وفيما يلي أهم تلك الدراسات:

١. المدخل إلى الاقتصاد الإسلامي دراسة تأصيلية مقارنة بالاقتصاد الوضعي، علي محيي الدين القره

داغي، هذا الكتاب تحدث عن مفهوم الاقتصاد الإسلامي وعن الإنتاج والتوزيع والقيم الأخلاقية في

ذلك، إلا أن كيفية تناول هذه الموضوعات تختلف عن منهجنا في هذا البحث، كما أن هذه الدراسة لم

تتناول ضمانات الرزق في الإسلام.

٢. المدخل إلى الاقتصاد الإسلامي، محمود عبد الكريم إرشيد، هذا الكتاب كسابقه يشترك مع هذا البحث

في مفهوم الاقتصاد الإسلامي والإنتاج والتوزيع مع اختلاف كيفية تناول هذه الموضوعات. كما أن هذا

الكتاب لم يتعرض لتحديد ضمانات الرزق في الإسلام.

٣. الاقتصاد الإسلامي أصول ومبادئ، شوقي أحمد دنيا، هذا الكتاب كذلك تناول الإنتاج والتوزيع

والاستهلاك، فهو يشترك مع هذا البحث في هذه الموضوعات مع اختلاف في كيفية تناولها. وكذلك لم

يتناول هذا الكتاب ضمانات الرزق في الإسلام.

٤. بحوث في الاقتصاد الاقتصادي الإسلامي، رفيق يونس المصري، هذا الكتاب لا يختلف عن الكتب

السابقة إلا في المنهج، فقد تناول الإنتاج والتوزيع والادخار، فهو يشترك مع هذا البحث في بعض

الجوانب المتعلقة بالإنتاج والتوزيع، غير أنه لم يرد عنده ذكر لميزان الاقتصاد الإسلامي كسابقيه، كما

أنه لم يتعرض لتحديد ضمانات الرزق في الإسلام.

٥. خصائص الاقتصاد الإسلامي وضوابطه الأخلاقية، محمود محمد بابلي، هذا الكتاب تحدث عن القيم

الإيمانية والأخلاقية للاقتصاد الإسلامي، وتحدث عن ميزان المصلحة كما تحدث عن الرزق، ويختلف عن

هذا البحث في أنه لم يتحدث عن ميزان الاقتصاد الإسلامي المتمثل في الكسب والإنفاق أو الإنتاج

والتوزيع، وإنما ركز على الملكية في الإسلام، كما أنه لم يرد عنده مصطلح ضمانات الرزق في الإسلام

رغم أنه تحدث عن التقوى والاستقامة، وهما من ضمانات الرزق حسبما اصطالحنا عليه في هذا

البحث.

خطة البحث

مقدمة موجزة تتضمن خلفية البحث، وإشكاليته، وأهدافه ومنهجه.

المبحث الأول: مفهوم النظام الاقتصادي الإسلامي

المبحث الثاني: ميزان النظام الاقتصادي الإسلامي

المبحث الثالث: ضمانات الرزق في الإسلام

مفهوم النظام الاقتصادي الإسلامي

النظام الاقتصادي الإسلامي له صلة بجميع مكونات الاقتصاد كعلم ومذهب، ذلك أنّ النظام عبارة عن فكرة، ومنهج، وتديبر، ورقابة. وكل نظام يتطلب ثلاثة عناصر، هي:

- فكرة معينة يقوم عليها النظام.
- جماعة متماسكة تلتفّ حول هذه الفكرة.
- رياسة تطبّق قواعد موضوعيّة معيّنة تستهدف رعاية هذه الفكرة.

وقبل بيان مفهوم النظام الاقتصادي الإسلامي يستحسن بيان مفهوم علم الاقتصاد الإسلامي، والمذهب الاقتصادي الإسلامي.

علم الاقتصاد الإسلامي

يقصد به: العلم الذي يُعنى بدراسة الموارد النادرة وتنميتها لإشباع الحاجات الإنسانية، وفق أحكام الإسلام، ومقاصده السامية.^١

المذهب الاقتصادي الإسلامي

كل اقتصاد لا بدّ له من مذهب يوجّهه. ومن ثمّ فإننا يمكن أن نستنتج من التعريفات التي يذكرها الباحثون للمذهب الاقتصادي الإسلامي: أنه يمثل العقيدة والأخلاق الإسلاميّة التي توجّه التطبيقات المتنوّعة لمفردات الاقتصاد الإسلامي وحل مشاكلها المتنوّعة.^٢ يقول دوابة: "إن انبثاق النظام الاقتصادي الإسلامي من عقيدة الإسلام يؤسس لحقيقة الإيمان في قلب المسلم وما يعكسه من صورة تطبيقية عملية على جوارحه".^٣

أما النظام الاقتصادي الإسلامي (Islamic Economic System)

فيمكن أن نستنتج من مفهوم النظام ومن كتابات بعض الباحثين أنه: التدابير الفكرية والمنهجية والرقابية الشرعية التي يقوم عليها الاقتصاد الإسلامي. ومن ثمّ يعتبر النظام الاقتصادي الإسلامي هو الجانب التنظيمي والتنسيقي للنشاط الاقتصادي الإسلامي من إنتاج وتوزيع واستهلاك وفق أحكام الشريعة الإسلامية، بصورة تؤدّي إلى وحدته وتكامله، وتحقيق مقاصده الاقتصادية والاجتماعية.^٤

١ - ينظر: المصري، رفيق يونس. (٢٠٠٩م). بحوث في الاقتصاد الإسلامي، دار المكتبي، دمشق، الطبعة الثانية، ص ٢٢. وإرشيد، محمد عبد الكريم. (٢٠١٢م). المدخل إلى الاقتصاد الإسلامي، دار النفائس، الأردن، الطبعة الأولى، ص ١٣-١٤. وشوقي أحمد دنيا. (٢٠١٣م). الاقتصاد الإسلامي أصول ومبادئ، دار الفكر الجامعي، الاسكندرية، الطبعة الأولى، ص ٢٨.

٢ - ينظر: إرشيد. (٢٠١٢م). المدخل إلى الاقتصاد الإسلامي، ص ١٥. وباقر الصدر، محمد. (١٩٩١م). اقتصادنا، دار التعارف، بيروت، الطبعة بدون، ص ٢٧. ودوابة، أشرف محمد. (٢٠١٠م). دراسات في الاقتصاد الإسلامي، دار السلام للنشر والتوزيع، القاهرة، الطبعة الأولى، ص ١٣. وبابلي، محمود محمد. (١٩٨٨م). خصائص الاقتصاد الإسلامي وضوابطه الأخلاقية، المكتب الإسلامي، بيروت، الطبعة الأولى، ص ٦٤-٦٧. ونجاح عبد العليم عبد الوهاب، أبو الفتوح. (٢٠١١م). الاقتصاد الإسلامي النظام والنظرية، عالم الكتب الحديث، إربد- الأردن، الطبعة الأولى، ص ١٣-١٥.

٣ - دوابة، أشرف محمد. (٢٠١٠م). الاقتصاد الإسلامي مدخل ومنهج، دار السلام للطباعة والنشر والتوزيع، القاهرة، ص ٥٤. والقرخ داغي، علي محي الدين. (٢٠٠٦م). المقدمة في المال والاقتصاد والملكية والعقد، دار البشائر الإسلامية، بيروت، الطبعة الأولى، ص ٩٩-١٠٠.

٤ - ينظر: إرشيد. (٢٠١٢م). المدخل إلى الاقتصاد الإسلامي، ص ١٦. ودوابة، أشرف محمد. (٢٠١٠م). الاقتصاد الإسلامي مدخل ومنهج، دار السلام للنشر والتوزيع، القاهرة، الطبعة الأولى، ص ٥٢.

ميزان الاقتصاد الإسلامي

ينبغي الاقتصاد الإسلامي على جناحين متوازنين لا بد من اجتماعهما لتحقيق الأهداف الاقتصادية التي تتلخص في الربط بين التنمية الاقتصادية والتنمية الاجتماعية، وهذا الجناحان هما: الكسب والإنفاق، وفيما يلي بيانها بالتفصيل.

الكسب

هو العمل مطلقاً، ويقصد به الإنتاج في مجال الاقتصاد. أي: العمل المنتج الذي تترتب عليه التنمية. وقد دلت آيات وأحاديث كثيرة على الكسب والعمل المنتج الذي ينفع صاحبه وينفع الناس بل والحيوانات، كآية العاشر من سورة الجمعة، والآية العشرين من سورة المزمل. وهذا الكسب في الاقتصاد الإسلامي يجب أن يكون كسباً حلالاً في ذاته، سالماً من كل ما يخلّ بحليته من الأساليب غير العادلة؛^٥ كالربا، والقمار، والغرر، والغش، والاحتكار، ونحو ذلك مما نهى الله ورسوله عنها. فقد ثبت في صحيح البخاري عَنِ الْمُقْدَامِ رَضِيَ اللَّهُ عَنْهُ، عَنْ رَسُولِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ قَالَ: «مَا أَكَلَ أَحَدٌ طَعَامًا قَطُّ، خَيْرًا مِنْ أَنْ يَأْكُلَ مِنْ عَمَلِ يَدِهِ، وَإِنَّ نَبِيَّ اللَّهِ دَاوُدَ عَلَيْهِ السَّلَامُ كَانَ يَأْكُلُ مِنْ عَمَلِ يَدِهِ».^٦ فلا يجوز أن يكون كسب المسلم من حرام، كما لا يجوز أن ينتج الشيء المحرم، ولا الشيء الضار للناس.^٧

فالكسب والإنتاج أساس في عمارة الأرض وضمان الرفاهية للناس جميعاً، وذلك أن الكسب مرتبط بحياة الإنسان، لأن الله استعمره في الأرض ليعمل فيها بما يحقق سعادته الدنوية والأخروية. وعمارة الأرض لا تكون إلا بالعمل المنتج القائم على التدبير الجيد من تخطيط وتنظيم ورقابة. ومن ثم فإن الإنتاج يعتبر من الأنشطة الإنسانية الضرورية في حياة الإنسان، وذلك أن الغالبية العظمى من الأشياء الموجودة في الكون لا تصلح لذاتها من حيث هي، لإشباع حاجات الإنسان، لكنّها مع ذلك مهياة لأن تكون كذلك بتدخل الإنسان.^٨ وهذا ما يدل عليه قول الله تعالى: ﴿هُوَ أَنْشَأَكُمْ مِنَ الْأَرْضِ وَآسَعَمَرَكُمْ فِيهَا﴾، (هود: ٦١). والإنتاج الأمثل في نظر الاقتصاد الإسلامي هو الذي يتكامل فيه ما أودع الله تعالى في الإنسان من الطاقة النفسية والجسمية والعقلية والروحية مع المحيط الطبيعي. وبذلك نجد أن الإسلام ربط الإنتاج بالعقيدة القاضية بوجوب الإيمان بأنّ الخلق كله إلى الله تعالى ﴿أَلَا لَهُ الْخَلْقُ وَالْأَمْرُ﴾، (الأعراف: ٥٤). وأنّ الرزق بيد الله تعالى، وأنّ الفقر والغنى من قدر الله تعالى، وأنّ المطلوب من الإنسان هو العمل الجاد المتقن الذي يعمّ نفعه، كما ربط الإسلام الإنتاج بمجموعة من القيم الأخلاقية، كالصدق، والعدل، والتعاون.. الخ^٩

الإنفاق أو التوزيع

الإنفاق هو توزيع الثروة وإعادة توزيعها على المستحقين ضرورة أو حاجة أو استحساناً. وبناء على هذا فإنّ الإنفاق أو التوزيع يتنوع إلى ثلاثة أنواع: الإنفاق الاستهلاكي، والإنفاق الاستثماري، والإنفاق الإحساني ويقصد به الزكاة والصدقات ونحوهما.^{١٠}

^٥ - ينظر: نجاح عبد العليم عبد الوهاب، أبو الفتوح. (٢٠١١م). الاقتصاد الإسلامي النظام والنظرية، ص ١١١.

^٦ - البخاري، محمد بن إسماعيل، أبو عبد الله. (٢٠٠١م). صحيح البخاري، تحقيق: محمد زهير الناصر، دار طوق النجاة، بيروت، الطبعة الأولى، كتاب البيوع، باب كسب الرجل وعمله بيده، ج ٣، ص ٥٧.

^٧ - دواية، أشرف محمد. (٢٠١٠م). الاقتصاد الإسلامي مدخل ومنهج، ص ٥٥.

^٨ - ينظر: شوقي أحمد دنيا. (٢٠١٣م). الاقتصاد الإسلامي أصول ومبادئ، دار الفكر الجامعي، الاسكندرية، الطبعة الأولى، ١٠٤.

^٩ - ينظر: القره داغي، علي محي الدين. (٢٠١٠م). المدخل إلى الاقتصاد الإسلامي دراسة تأصيلية مقارنة بالاقتصاد الوضعي، دار البشائر الإسلامية، بيروت، الطبعة الثانية، ص ٦١، ٦٥.

^{١٠} - ينظر: شوقي أحمد دنيا. (٢٠١٣م). الاقتصاد الإسلامي أصول ومبادئ، دار الفكر الجامعي، الاسكندرية، الطبعة الأولى، ص ٩٨.

والفرق بين التوزيع وإعادة التوزيع أنّ التوزيع هو ما يرتبط بالثروات وأساسه الجهد البشري مثل أجور العمال ورواتب الموظفين، أو يكون مبنياً على المعاوضة^{١١}. وأما إعادة التوزيع فهو ما يرتبط بالدخول، وأساسه الإحسان سواء كان إلزامياً أو طوعياً، قصد تحقيق خلق التعاون والتكافل في المجتمع، حسب اعتبارات اجتماعية وإنسانية غير وظيفية كاعتبار الحال في توزيع الزكاة، فإنه يفيد في إعادة التوزيع والضمان الاجتماعي. واعتبار القرابة في توزيع الميراث، ويفيد هذا الاعتبار إعادة التوزيع والضمان الاجتماعي وصلة الأرحام. كما هو ثابت في مجموعة من الآيات القرآنية. ينظر: (التوبة: ١٠٣)، و (المعارج: ٢٤-٢٥)، و (الذاريات)، و (النساء: ١١).

إنّ التوزيع العادل يقوم على أساس احترام الجهد البشري وعلى التوفيق بين المصالح الفردية والمصالح العامة الاجتماعية. والتوزيع العادل يحقّق العَمَل والموظفين على بذل الجهد والإخلاص في العمل، مما يعود على المؤسسات الإنتاجية والوظيفية بالجودة والوفرة في الناتج من العملية الوظيفية أو الإنتاجية. فالعمل يعتبر من أهم أدوات التوزيع، لأنّه السبب الحقيقي في التملك^{١٢}. ومنها يظهر أنّ "هدف عدالة التوزيع وإعادة التوزيع في الاقتصادي الإسلامي لا تقتصر على محاربة الفقر فقط، بل يشمل أيضاً تقريب الفوارق بين الدخل والثروات وعلى نحو يحول دون أن يكون المال دولة بين الأغنياء فقط"^{١٣}.

ففي الاقتصاد الإسلامي جناح الإنفاق والتوزيع يجب أن يكون موازياً لجناح الكسب والإنتاج، بحث يعتبر طغيان أحدهما على الآخر خلافاً في النظام الاقتصادي، ومن ثمّ الاقتصاد الإسلامي يأمر بالتوسط والاعتدال في الإنفاق، ﴿وَالَّذِينَ إِذَا أَنْفَقُوا لَمْ يُسْرِفُوا وَلَمْ يَقْتُرُوا وَكَانَ بَيْنَ ذَلِكَ قَوَامًا ٦٧﴾، (الفرقان: ٦٧). فالإسراف هو طغيان الإنفاق على الكسب، فلا ينبغي للإنسان أن ينفق فوق كسبه وإنتاجه أو مدخلاته الشهرية. والتقتير طغيان الكسب على الإنفاق، بحيث يكون الإنفاق أقلّ من المطلوب مع إمكان بلوغ المطلوب من غير تكلف. فهو البخل والشحّ اللذان نهى الله عنها في قوله: ﴿وَمَنْ يَخْلُقْ فَإِنَّمَا يَبْخُلْ عَن نَفْسِهِ﴾، (محمد: ٣٨). وقوله: ﴿وَمَنْ يُوقْ شَحْ نَفْسِهِ فَأُولَئِكَ هُمُ الْمُفْلِحُونَ ٩﴾، (الحشر: ٩). ومن لوازم الإنفاق: الاستهلاك، والادخار.

فالاستهلاك

هو ما يستنفقه الشخص في احتياجاته اليومية؛ سواء كان شخصاً حقيقياً كالإنسان أو اعتبارياً كالدولة أو المؤسسات. قال تعالى: ﴿وَكُلُوا وَاشْرَبُوا وَلَا تُسْرِفُوا إِنَّهُ لَا يُحِبُّ الْمُسْرِفِينَ ٣١﴾، (الأعراف: ٣١). كما يدعو الاقتصاد الإسلامي إلى التوسط واعتدال في النفقة، وقد تقدّم ذلك في (آية الفرقان: ٦٧). فيبغي أن يكون المسلم مقتصدًا في استهلاكه ولا يستهلك إلا الحلال^{١٤}.

ومما ورد عند الفقهاء في ذلك قول محمد بن الحسن الشيباني: المسألة، (أي: الإشباع) على أربعة أوجه: ففي مقدار ما يسدّ به رمقه، ويتقوى على الطاعة، هو مُثَابٌ غير مُعَاقِبٍ؛ وفيما زاد على ذلك إلى حدّ الشبع هو مباح له مُحَاسَبٌ على ذلك حساباً يسيراً بالعرض؛ وفي قضاء الشهوات ونيل اللذات من الحلال هو مرخّص له، مُحَاسَبٌ على ذلك، مُطَالَبٌ بشكر النعمة، وحقّ الجائعين؛ وفيما زاد على الشبع فإنّ الأكل فوق الشبع حرام^{١٥}.

^{١١} - ينظر: المصري، رفيق يونس. (٢٠٠٩م). بحوث في الاقتصاد الإسلامي، ص ١٥٩.

^{١٢} - ينظر: إرشيد. (٢٠١٢م). المدخل إلى الاقتصاد الإسلامي، ص ٢٦٠.

^{١٣} - نجاح عبد العليم عبد الوهاب، أبو الفتوح. (٢٠١١م). الاقتصاد الإسلامي النظام والنظرية، ص ١٠٢.

^{١٤} - دواية، أشرف محمد. (٢٠١٠م). الاقتصاد الإسلامي مدخل ومنهج، ص ٥٥.

^{١٥} - الشيباني، محمد بن الحسن. (١٩٨٠م). الكسب بشرح شمس الأئمة السرخسي، تحقيق: سهيل زكار، الناشر: عبد الهادي حرصوني، دمشق، الطبعة الأولى، ص ١٠٤.

الادخار

وهو ما يحتفظ به الشخص مما فضل عن احتياجاته اليومية، احتياطا للحالات الطارئة. كما قال تعالى: ﴿فَمَا حَصَدْتُمْ فَذَرُوهُ فِي سُنْبُلِهِ إِلَّا قَلِيلًا مِّمَّا تَأْكُلُونَ ٤٧﴾، (يوسف: ٤٧). وورد لفظ الادخار في قوله تعالى: ﴿وَأَنْبِئُكُمْ بِمَا تَأْكُلُونَ وَمَا تَدْخِرُونَ فِي بُيُوتِكُمْ﴾، (آل عمران: ٤٩).

وللادخار دوافع كثيرة، منها:^{١٦}

منها: الادخار للطوارئ، ويدخل فيه ادخار السنوات السمان للسنوات العجاف الثابت في (سورة يوسف: ٤٧-٤٨). وادخار الصحة للمرض الثابت في الحديث: «وَحُذِّ مِنْ صَحَّتِكَ لِمَرْضِكَ، وَمِنْ حَيَاتِكَ لِمَوْتِكَ».^{١٧}

ومنها الادخار للذاري الثابت في الحديث: «إِنَّكَ أَنْ تَذَرِ وَرَثَتَكَ أَغْنِيَاءَ، خَيْرٌ مِنْ أَنْ تَذَرَهُمْ عَالَةً يَتَكَفَّفُونَ النَّاسَ».^{١٨} البخاري، كتاب الوصايا، ج ٤، ص ٣.

تحت الإنفاق أيضا: الاستثمار الدنيوي، والاستثمار الأخروي، من خلال التوزيع العادل وإعادة التوزيع. وتشهد لذلك مجموعة من النصوص الشرعية: منها: آية الأمر بأخذ الزكاة من (سورة التوبة: ١٠٣). والآيات التي تحت على الإنفاق، مثل: آية (سورة البقرة: ٢٦١، ٢٧٤)، وغيرها.

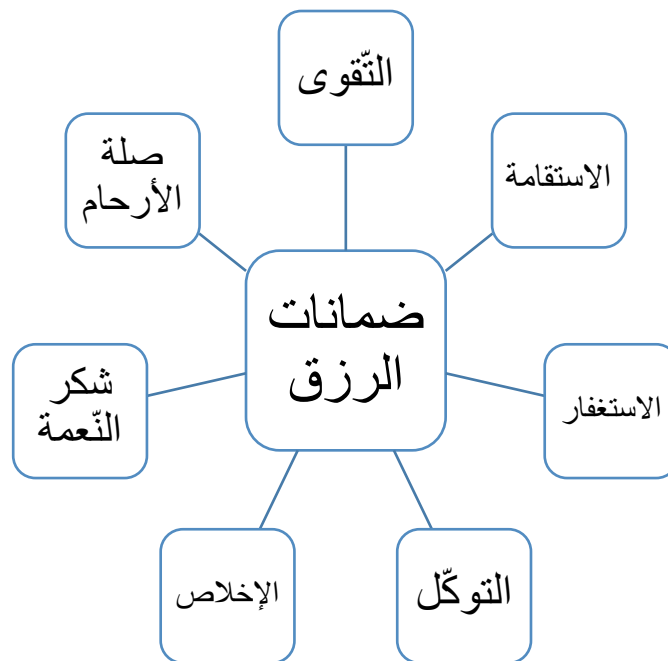
ضمانات الرزق في الإسلام

قدّم الإسلام ضمانات عدّة للرزق كلها مرتبطة بتحسين العلاقة بين الإنسان وربّه وبينه وبين الآخرين من بني جنسه وبخاصة أقرابه والمحتاجين. مع العلم أنّ الله سبحانه ربط الرزق كله به سبحانه وذلك في أكثر من مائة موضع في القرآن الكريم بصيغ ودلالات مختلفة، مما يدلّ على أنّ الإنسان وإنّ وجب عليه أن يسعى لطلب رزقه، ولكن يجب أن يعرف أنّ الرازق هو الله سبحانه وحده، ليس من غيره ولا بالجهد البشري. وقد دلت على ذلك مجموعة من الآيات القرآنية منها: قول الله تعالى: ﴿قُلْ مَنْ يَرْزُقُكُمْ مِنَ السَّمَاءِ وَالْأَرْضِ قُلِ اللَّهُ﴾، (سبا: ٢٤). وقوله سبحانه: ﴿لَهُ مَقَالِيدُ السَّمَوَاتِ وَالْأَرْضِ يَسُطُّ الرِّزْقَ لِمَنْ يَشَاءُ وَيَقْدِرُ إِنَّهُ بِكُلِّ شَيْءٍ عَلِيمٌ ١٢﴾، (الشورى: ١٢). وقوله عزّ وجل: ﴿اللَّهُ لَطِيفٌ بِعِبَادِهِ يَرْزُقُ مَنْ يَشَاءُ وَهُوَ الْقَوِيُّ الْعَزِيزُ ١٩﴾، (الشورى: ١٩). وتتلخّص ضمانات الرزق وفيما يلي:

^{١٦} - ينظر: المصري، رفيق يونس. (٢٠٠٩م). بحوث في الاقتصاد الإسلامي، ص ١٣٣-١٣٤.

^{١٧} - البخاري. (٢٠٠١م). صحيح البخاري، تحقيق: محمد زهير الناصر، كتاب الرقاق، باب قول النبي صلى الله عليه وسلم كُنْ فِي الدُّنْيَا كَأَنَّكَ غَرِيبٌ أَوْ غَابِرٌ سَبِيلٍ، ج ٨، ص ٨٩، رقم: ٦٤١٦.

^{١٨} - البخاري. (٢٠٠١م). صحيح البخاري، تحقيق: محمد زهير الناصر، كتاب الجنائز، باب: رَأَى النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ سَعْدَ بْنَ حَوْلَةَ، ج ٢، ص ٨١، رقم: ١٢٩٥. وكتاب الوصايا، باب: أَنْ يَتْرَكَ وَرَثَتَهُ أَغْنِيَاءَ خَيْرٌ مِنْ أَنْ يَتَكَفَّفُوا النَّاسَ، ج ٤، ص ٣، رقم: ٢٧٤٢. وكتاب المغازي، باب: حَجَّةُ الْوَدَاعِ، ج ٥، ص ١٧٨، رقم: ٤٤٠٩. وكتاب الدعوات، باب: الدُّعَاءُ بِرَفْعِ الْوَبَاءِ وَالْوَجَعِ، ج ٨، ص ٨٠، رقم: ٦٣٧٣. ومسلم بن الحجاج النيسابوري. (١٩٥٥م). صحيح مسلم، تحقيق: محمد فؤاد عبد الباقي، دار إحياء التراث العربي، بيروت، الطبعة بدون، كتاب الوصية، باب: الْوَصِيَّةُ بِالثَّلَاثِ، ج ٣، ص ١٢٥٠، رقم: ١٦٢٨.



التقوى

وهي الخوف من الجليل والعمل بالتنزيل والاستعداد ليوم الرحيل كما قال رضي الله عنه. ويدل على كونها من ضمانات الرزق قول الله تعالى: ﴿وَمَنْ يَتَّقِ اللَّهَ يَجْعَلْ لَهُ مَخْرَجًا ۚ وَيَرْزُقْهُ مِنْ حَيْثُ لَا يَحْتَسِبُ﴾، الطلاق: ٣-٢. ﴿وَلَوْ أَنَّ أَهْلَ الْقُرَىٰ ءَامَنُوا وَأَتَّقُوا لَفَتَحْنَا عَلَيْهِم بَرَكَاتٍ مِّنَ السَّمَاءِ وَالْأَرْضِ﴾، (الأعراف: ٩٦). كما أن التقوى يعتبر ضابطاً أساسياً من ضوابط الاقتصاد الإسلامي، حقيقتها مراقبة الله والحرص على مرضاته والخوف من عذابه. وأن الإيمان والتقوى من أسباب تحقيق البركة^{١٩} ولذلك كان تحققها من ضمانات الرزق في الإسلام كما دلت على ذلك الآيات القرآنية المتقدمة. وقد ثبت في صحيح مسلم عن سعد بن أبي وقاص رضي الله عنه أنه قال: سمعت رسولاً لله صلى الله عليه وسلم يقول: «إن الله يحب العبد التقي، الغني، الخفي»^{٢٠}.

الاستقامة

هي الاعتدال والالتزام بأوامر الله ورسوله واجتناب نواهيهما. ويدل على أن الاستقامة من ضمانات الرزق قول الله تعالى: ﴿وَأَلَوْ اسْتَقَمْتُمْ عَلَى الطَّرِيقَةِ لَأَسْقِيَنَّكُمْ مَاءً غَدَقًا ۚ﴾، (الجن: ١٦). فالآية تدعو إلى الاستقامة الجماعية؛ لأن الاستقامة في السلوك لها أثرها على المجتمع، من حيث تجنب اقتراف الأشياء الممنوعة. كما أنها تتعلق بسلوك الإنسان ظاهراً وباطناً.^{٢١}

الاستغفار

وهو طلب المغفرة، ولا يكون إلا من الله عز وجل لأنه هو الغفور الرحيم، قال تعالى: ﴿قُلْ يُعْبَادِي الَّذِينَ أَسْرَفُوا عَلَىٰ أَنفُسِهِمْ لَا تَقْنَطُوا مِن رَّحْمَةِ اللَّهِ إِنَّ اللَّهَ يَغْفِرُ الذُّنُوبَ جَمِيعًا إِنَّهُ هُوَ الْغَفُورُ الرَّحِيمُ ۝٥٣﴾ الزمر: ٥٣. وفي الحديث القدسي: «يَا ابْنَ آدَمَ، إِنَّكَ مَا دَعَوْتَنِي وَرَجَوْتَنِي غَفَرْتُ لَكَ عَلَىٰ مَا كَانَ فِيكَ وَلَا أَبَالِي، يَا ابْنَ آدَمَ لَوْ بَلَغَتْ ذُنُوبُكَ عَنَانَ السَّمَاءِ، ثُمَّ

^{١٩} - ينظر: بابلي، محمود محمد. (١٩٨٨م). خصائص الاقتصاد الإسلامي وضوابطه الأخلاقية، ص ٢٠٠. ودوابة، أشرف محمد. (٢٠١٠م).

الاقتصاد الإسلامي مدخل ومنهج، ص ٥٤.

^{٢٠} - مسلم. (١٩٥٥م). صحيح مسلم، تحقيق: محمد فؤاد عبد الباقي، كتاب الزهد والرفاق، ج ٤، ٢٢٧٧، رقم: ٢٩٦٥.

^{٢١} - ينظر: بابلي، محمود محمد. (١٩٨٨م). خصائص الاقتصاد الإسلامي وضوابطه الأخلاقية، ص ٨٠، ٢١٦.

اسْتَغْفَرْتَنِي غَفْرَتُكَ وَلَا أَبَالِي، يَا ابْنَ آدَمَ، إِنَّكَ لَوِ اتَّيْتَنِي بِقُرَابِ الْأَرْضِ خَطَايَا ثُمَّ لَقِيتَنِي لَا تُشْرِكُ بِي شَيْئًا لَا تَتَيْنُكَ بِقُرَابِهَا مَغْفِرَةً»^{٢٢} ويدل على أن الاستغفار من ضمانات الرزق قول الله تعالى: ﴿فَقُلْتُ اسْتَغْفِرُوا رَبَّكُمْ إِنَّهُ كَانَ غَفَّارًا ۝١٠ يُرْسِلِ أَسْمَاءَ عَلَيْكُمْ مَدْرَارًا ۝١١ وَيُمْدِدْكُمْ بِأَمْوَالٍ وَبَنِينَ وَيَجْعَلْ لَكُمْ جَنَّاتٍ وَيَجْعَلْ لَكُمْ أَنْهَارًا ۝١٢﴾، (نوح: ١٠-١٢).

التوكل

هو الاعتماد على الله سبحانه وإسناد الأمر كله إليه مع اتخاذ الأسباب. ويدل على أن التوكل من ضمانات الرزق قول الله تعالى: ﴿وَمَنْ يَتَوَكَّلْ عَلَى اللَّهِ فَهُوَ حَسْبُهُ﴾، ﴿وَتَوَكَّلْ عَلَى الْحَيِّ الَّذِي لَا يَمُوتُ﴾. وقوله صلى الله عليه وسلم: «لَوْ أَنَّكُمْ تَوَكَّلْتُمْ عَلَى اللَّهِ حَقَّ تَوَكُّلِهِ، لَرَزَقَكُمْ كَمَا يَرْزُقُ الطَّيْرَ، تَغْدُو خِمَاصًا، وَتَرُوحُ بِطَانًا»^{٢٣}.

الإخلاص في العمل

وهو أدائه خالصا لله تعالى مع رجاء ثوابه والخوف من عقابه، وقد دل على أن الإخلاص من ضمانات الرزق قول الله تعالى: ﴿قُلْ إِنَّ رَبِّي يَبْسُطُ الرِّزْقَ لِمَنْ يَشَاءُ مِنْ عِبَادِهِ وَيَقْدِرُ لَهُ وَمَا أَنْفَقْتُمْ مِنْ شَيْءٍ فَهُوَ يُخْلِفُهُ وَهُوَ خَيْرُ الرَّازِقِينَ ۝٣٩﴾، (سبا: ٣٩).

شكر النعمة

هو الثناء الجميل على المنعم، والاعتراف له بالفضل والإحسان، وظهور أثر النعمة على المنعم عليه في خلقه ومظهره ومطعمه ومشربه. وقد دل على أن شكر النعمة من ضمانات الرزق نصوص من القرآن والحديث، منها: قول الله تعالى: ﴿وَإِذْ تَأَذَّنَ رَبُّكُمْ لَئِنْ شَكَرْتُمْ لَأَزِيدَنَّكُمْ وَلَئِنْ كَفَرْتُمْ إِنَّ عَذَابِي لَشَدِيدٌ ۝٧﴾، (إبراهيم: ٧). وقوله صلى الله عليه وسلم: «إِنَّ اللَّهَ ليرضى عن العبد أن يأكل الأكلة فيحمده عليها، أو يشرب الشربة فيحمده عليها»^{٢٤}. مسلم. وقال عليه الصلاة والسلام: «إِنَّ اللَّهَ يُحِبُّ أَنْ يَرَى أَثَرَ نِعْمَتِهِ عَلَى عَبْدِهِ»^{٢٥}. وقال صلى الله عليه وسلم: «مَنْ لَا يَشْكُرُ النَّاسَ لَا يَشْكُرُ اللَّهَ»^{٢٦}.

صلة الأرحام

هي وصل الأقارب بحبهم واحترامهم وتقديرهم والإحسان إليهم، وكف الأذى عنهم، وزيارتهم وتفقد أحوالهم، والدعاء لهم. فمجموع هذه الصفات الإنسانية هي مظاهر صلة الأرحام، التي أمر الله بصلتها وحذر من قطعها. وقد دلت النصوص الشرعية على وجوب صلة الأرحام، مثل الآية رقم ١ من سورة النساء والآية رقم ٧٥ من سورة الأنفال. بالإضافة إلى أحاديث كثيرة هذا الشأن دلت بمجموعها أن صلة الأرحام "فصلة الأرحام تجمعت فيها حفظ الدين، على الإيمان بالله، وحفظ

^{٢٢} - الترمذي، محمد بن عيسى. (١٩٩٦م). سنن الترمذي، تحقيق: بشار عواض معروف، دار الغرب الإسلامي، بيروت، الطبعة الأولى، أبواب الدعوات، باب، ج ٥، ص ٥٠٩، رقم: ٣٥٤٠. وقال الترمذي: حديث حسن غريب لا نعرفه إلا من هذا الوجه.

^{٢٣} - ابن ماجه، محمد بن يزيد القزويني. (٢٠٠٩م). سنن ابن ماجه، تحقيق: الأرنبوط، شعيب وآخرون، دار الرسالة العالمية، الطبعة الأولى، أبواب الزهد، باب التَّوَكُّلِ وَالْيَقِينِ، ج ٥، ص ٢٦٦، رقم: ٤١٦٤.

^{٢٤} - مسلم. (١٩٥٥م). صحيح مسلم، تحقيق: محمد فؤاد عبد الباقي، كتاب الذكر والدعاء والتوبة والاستغفار، باب استحباب حمد الله تعالى بعد الأكل والشرب، ج ٤، ص ٢٠٩، رقم: ٢٧٣٤.

^{٢٥} - الترمذي. (١٩٩٦م). سنن الترمذي، تحقيق: بشار عواض معروف، أبواب الأدب، باب مَا جَاءَ أَنَّ اللَّهَ تَعَالَى يُحِبُّ أَنْ يَرَى أَثَرَ نِعْمَتِهِ عَلَى عَبْدِهِ، ج ٤، ص ٥١٠، رقم: ٢٨١٩.

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النفس بطول العمر والبركة فيه، وحفظ المال؛ لأنها من ضمانات الرزق، ودل على ذلك قوله صلى الله عليه وسلم: «مَنْ أَحَبَّ أَنْ يُبْسَطَ لَهُ فِي رِزْقِهِ وَيُنْسَأَ لَهُ فِي أَثَرِهِ، فَلْيَصِلْ رَحْمَتَهُ».^{٢٧}

الخاتمة

بعد تتبع حثيث لموضوعات البحث، ودراسة جوانبها المختلفة تحليلًا ومناقشة، توصلَ البحث إلى مجموعة من النتائج.

نتائج البحث

النتائج التي توصل إليها البحث هي:

- ١ - النظام الاقتصادي الإسلامي هو الجانب التنظيمي للنشاط الاقتصادي الإسلامي من إنتاج وتوزيع واستهلاك وفق أحكام الشريعة الإسلامية.
- ٢ - ميزان الاقتصاد الإسلامي هو الكسب والإنفاق/ الإنتاج والتوزيع. ومن ثم فإن ميزان النظام الاقتصادي الإسلامي هو العمل المنتج من أجل تحقيق التنمية، والإنفاق من أجل التمكين وضمان حد الكفاية أو الكفاف لجميع أفراد المجتمع.
- ٣ - يقصد بالكسب العمل مطلقًا سواء كان إنتاجيًا أو استهلاكيًا.
- ٤ - الإنفاق هو توزيع الثروة وإعادة توزيعها على المستحقين ضرورةً أو حاجةً أو استحسانًا.
- ٥ - التوازن بين الكسب والإنفاق من لوازم الاقتصاد الإسلامي.
- ٦ - الفرق بين التوزيع وإعادة التوزيع أن التوزيع هو ما يرتبط بالثروات وأساسه الجهد البشري. وإعادة التوزيع يرتبط بالدخول، وأساسه الإحسان سواء كان إلزاميًا أو طوعيًا.
- ٧ - الإنتاج الأمثل في نظر الاقتصاد الإسلامي هو الذي تتفاعل فيه الطاقة النفسية والجسمية والعقلية والروحية مع المحيط الطبيعي.
- ٨ - ربط الإسلام الإنتاج بالعقيدة القاضية بوجوب الإيمان بأن الله هو الرازق، كما ربطه بمجموعة من القيم الأخلاقية، كالصدق، والعدل، والتعاون.
- ٩ - إن التوزيع العادل يحفز العمال والموظفين على بذل الجهد والإخلاص في العمل، مما يعود على المؤسسات الإنتاجية والوظيفية بالجودة والوفرة في الناتج من العملية الوظيفية أو الإنتاجية.
- ١٠ - تتلخص ضمانات الرزق في مجموعة من القيم الأخلاقية - وردت في سياقات مختلفة في القرآن الكريم والأحاديث النبوية الشريفة - هي: التقوى، الاستقامة، الاستغفار، التوكل، والإخلاص في العمل، شكر النعمة، وصلة الأرحام.

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Penentuan Aras Laras Dasar Sungai menggunakan Teknologi RTK GNSS bersama Echo Sounder: Kajian di Sungai Chini Supercamp

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Abstrak

Kajian ini bertujuan untuk menentukan aras laras dasar sungai menggunakan teknologi Real-Time Kinematic Global Navigation Satellite System (RTK GNSS) jenis South, Total Station bersama Echo Sounder. Metodologi yang digunakan melibatkan pengukuran langsung di lokasi Sungai Chini Supercamp, di mana data kedudukan diperoleh melalui sistem RTK GNSS dan Echo Sounder. Lokasi pengambilan data ditentukan di beberapa titik kritikal sepanjang sungai yang dianalisis. Proses pengukuran melibatkan penggunaan peralatan RTK GNSS jenis South dan Echo Sounder, yang membolehkan pengambilan data kedalaman secara langsung. Data yang diperoleh kemudiannya dianalisis untuk menghasilkan model ketinggian dasar sungai. Kajian ini juga menilai keberkesanan penggunaan teknologi RTK GNSS dan Echo Sounder dalam pengurusan sumber air dan pemuliharaan ekosistem sungai. Selain itu, kajian ini turut melihat hasil pengukuran yang dijalankan secara langsung yang memberikan data untuk dianalisis keberkesanan kaedah pengukuran. Dapatan kajian ini diharapkan dapat memberikan panduan yang lebih tepat dalam pengurusan sumber air dan pemuliharaan ekosistem sungai, serta menyokong keputusan dalam perancangan dan pembangunan infrastruktur berkaitan air. Penggunaan teknologi RTK GNSS dan Echo Sounder yang lebih cepat ini juga dapat mengurangkan masa dan kos pengukuran di lapangan. Dengan adanya data yang lebih tepat dan terperinci, pihak berkuasa dan pengurus sumber air dapat membuat keputusan yang lebih baik dalam usaha pemuliharaan dan pengurusan sungai. Tambahan pula, teknologi ini dapat digunakan untuk pemantauan berterusan, yang penting untuk mengesan perubahan jangka panjang dalam ekosistem sungai. Secara keseluruhannya, kajian ini menunjukkan bahawa penggunaan RTK GNSS jenis South bersama Echo Sounder adalah sesuai dan berkesan untuk pengukuran aras laras dasar sungai, dan ia menawarkan banyak manfaat dalam konteks pemeliharaan ekosistem sungai.

Kata Kunci: *RTK GNSS, Aras laras dasar Subgai, Pemetaan Hidrografi.*

Pengenalan

Sungai merupakan sumber penting bagi ekosistem dan kehidupan manusia, menyediakan air untuk keperluan domestik, pertanian, dan industri. Penentuan aras laras dasar sungai memainkan peranan penting dalam pengurusan sumber air dan pemeliharaan ekosistem sungai. Dengan kemajuan teknologi pengukuran, kaedah Real-Time Kinematic Global Navigation Satellite System (RTK GNSS) dan Echo Sounder telah menjadi pilihan utama untuk mendapatkan data kedudukan dan kedalaman yang tepat dan efisien. Kaedah ini menggunakan penerima GNSS dan



Echo Sounder yang mampu memberikan hasil pengukuran secara langsung, menjadikannya sangat sesuai untuk aplikasi yang memerlukan ketepatan tinggi seperti penentuan aras laras dasar sungai.

Kajian ini memfokuskan kepada penggunaan peralatan RTK GNSS jenis South dan Echo Sounder CHC dalam mengukur aras laras dasar Sungai Chini Supercamp. Penggunaan teknologi ini membolehkan pengumpulan data yang cepat dan tepat, yang kemudiannya dianalisis untuk menghasilkan model ketinggian dasar sungai. Dengan data yang diperoleh, pihak berkuasa dapat membuat keputusan yang lebih baik dalam perancangan dan pengurusan sumber air, serta dalam usaha pemeliharaan ekosistem sungai yang lebih berkesan.

Selain itu, kajian ini juga menilai keberkesanan penggunaan teknologi RTK GNSS dan Echo Sounder dalam konteks pengurusan sumber air. Penggunaan teknologi ini bukan sahaja mengurangkan masa dan kos pengukuran di lapangan, tetapi juga menyediakan data yang lebih terperinci dan tepat. Ini membolehkan pemantauan berterusan terhadap perubahan jangka panjang dalam ekosistem sungai, yang penting untuk memastikan kelestarian dan kesejahteraan alam sekitar.

Sorotan Kajian

Sistem Navigasi Satelit Global (GNSS) telah merevolusikan cara kita mendekati penentuan kedudukan, navigasi, waktu dalam pelbagai bidang, dari pengangkutan dan pengukuran hingga pemantauan alam sekitar dan tindak balas kecemasan. Sistem-sistem ini, termasuk GPS, GLONASS, Galileo, dan Beidou, menyediakan akses berterusan kepada maklumat masa dan lokasi di seluruh dunia. (Vivek et al., 2020). Salah satu penerima GNSS yang boleh memproses data tersebut adalah dari jenis South.

Sistem ini menggunakan rangkaian satelit yang menghantar isyarat dalam pelbagai frekuensi, membolehkan pengguna menentukan lokasi dan masa mereka dengan tepat (Vivek et al., 2020). Seperti yang dinyatakan oleh Abidin (2006), GNSS adalah sistem berasaskan satelit yang menawarkan banyak isyarat berterusan untuk pengguna di seluruh dunia. Menggabungkan pelbagai rangkaian GNSS, seperti GPS dan GLONASS, telah membawa manfaat dan cabaran. Di satu pihak, ia meningkatkan ketepatan penentuan posisi, kebolehpercayaan, dan ketersediaan dengan menambah bilangan satelit yang kelihatan..

Romadhon, R. (2018) Prinsip dasar penentuan kedudukan adalah pengukuran jarak ke beberapa satelit GPS yang telah diketahui koordinatnya. Penentuan kedudukan ini dapat dilakukan dengan berbagai kaedah yang masing-masing mempunyai gaya tersendiri. Ianya selari dengan, Abidin (2021) bahwa prinsip dasar penentuan posisi dengan GNSS, termasuk RTK GNSS, adalah dengan mengukur jarak ke beberapa satelit yang telah diketahui koordinatnya secara serentak..

C, Darwanto (2023) mengutarakan bahawa, pada dasarnya terdapat beberapa metodologi penentuan kedudukan dengan menggunakan GNSS yang dapat dikelompokkan mengikut



beberapa kaedah iaitu, Kinematik, Statik, rapid Statik, Pseudo-kinematic (Stop and Go). Dalam pada itu pula menurut Hikmawan dan Ruslan (2022), metodologi RTK (*Real Time Kinematic*) merupakan salah satu kaedah dalam penentuan kedudukan yang hasilnya diperoleh serta merta. Kaedah RTK GNSS (Real-Time Kinematic Global Navigation Satellite System) jenis South telah digunakan secara meluas kerana ketepatannya yang berupaya untuk memberikan data masa nyata. SOUTH Surveying & Mapping Instrument Co., Ltd. (2024) menyatakan bahawa RTK GNSS jenis South, seperti model Galaxy G6, mampu memberikan ketepatan posisi sekitar 1-5 cm.

Kaedah Real-Time Kinematic Global Navigation Satellite System (RTK GNSS) jenis South memberikan satu pilihan yang inovatif dalam pengukuran kedudukan dengan ketepatan tinggi. Dengan menggunakan teknologi satelit, RTK GNSS membolehkan pengukuran yang lebih cepat berbanding kaedah tradisional. Kaedah Real-Time Kinematic (RTK) adalah penentuan kedudukan menggunakan sekurang-kurangnya dua penerima GPS iaitu satu penerima “asas” dan satu atau lebih penerima “rover”. Di sini fungsi penerima “asas” adalah merujuk kepada penurunan data pengukuran yang diterima dari satelit yang kelihatan. Data ini kemudiannya dihantar terus kepada penerima “rover”, bersama dengan lokasinya, kepada penerima “rover”. Dalam masa yang sama penerima “rover” akan memuat turun data dari satelit yang kelihatan dan memprosesnya dengan data stesen asas. “Rover” ini bertindak untuk menganggarkan lokasinya relatif kepada asas. Kajian ini bertujuan untuk meneroka keberkesanan kaedah RTK GNSS dalam menentukan aras laras dasar sungai, serta membandingkan hasilnya dengan data yang diperoleh melalui teknik konvensional. Dapatan kajian ini diharapkan dapat memberikan panduan yang berguna dalam pengurusan dan pemeliharaan sumber air di Malaysia.

Wang et al.(2019) menggunakan pelbagai sistem GNSS dan kaedah penggabungan isyarat untuk mencapai ketepatan pada tahap milimeter dalam menganggarkan aras air sungai. Penggunaan teknologi GPS-RTK semakin diterima dalam pelbagai aplikasi ukur, termasuk tinjauan perubahan tanah dan tinjauan marin, kerana kemampuannya untuk menyediakan data kedudukan yang sangat tepat tanpa memerlukan stesen pangkalan khusus (Xu, 2012)(Gao et al., 2016). RTK GNSS boleh memberikan ketepatan penentu kedudukan pada tahap sentimeter dengan menghapuskan ralat menggunakan teknik perbezaan berganda berdasarkan pemerhatian dari stesen rujukan. (Wen & Hsu, 2021)

Selain itu, penggunaan Echo Sounder dalam kajian hidrografi telah menjadi semakin penting. Echo Sounder, seperti CEESCOPE™ dan CEE-LINE™, adalah alat yang digunakan untuk mengukur kedalaman air dengan menghantar isyarat bunyi ke dasar air dan mengukur masa yang diambil untuk isyarat tersebut kembali. Echo Sounder yang digabungkan dengan GNSS, seperti CEESCOPE™ yang mempunyai RTK GNSS terbina dalam, membolehkan pengukuran kedalaman yang tepat dan data kedudukan yang serentak dalam satu sistem yang mudah digunakan. Teknologi ini sangat berguna dalam kajian hidrografi untuk mendapatkan data kedalaman yang tepat dan boleh dipercayai.



Dengan menggabungkan teknologi RTK GNSS dan Echo Sounder, kajian ini dapat memberikan data yang lebih tepat dan komprehensif mengenai aras laras dasar sungai, yang penting untuk pengurusan dan pemeliharaan sumber air di Malaysia.

Penyataan Masalah

Pengurusan sumber air dan pemeliharaan ekosistem sungai memerlukan data yang tepat dan terperinci mengenai aras laras dasar sungai. Namun, kaedah pengukuran tradisional sering kali memakan masa dan kos yang tinggi serta mungkin tidak memberikan ketepatan yang diperlukan. Oleh itu, terdapat keperluan untuk menggunakan teknologi yang lebih berkesan dan tepat dalam pengukuran aras laras dasar sungai. Kajian ini bertujuan untuk menilai keberkesanan penggunaan teknologi *Real-Time Kinematic Global Navigation Satellite System* (RTK GNSS) jenis South dalam pengukuran aras laras dasar sungai di Sungai Chini Supercamp. Dengan menggunakan teknologi ini, kajian ini juga bertujuan untuk menyediakan data yang lebih cepat dan terperinci bagi menyokong keputusan dalam perancangan dan pembangunan infrastruktur berkaitan air serta pemuliharaan ekosistem sungai.

Objektif Kajian

- a. Menentukan aras laras dasar sungai di Sungai Chini Supercamp menggunakan teknologi Real-Time Kinematic Global Navigation Satellite System (RTK GNSS) jenis South.
- b. Mengumpul dan menganalisis data kedudukan melalui sistem RTK GNSS secara langsung.

Skop Kajian

Lokasi Sungai Chini Supercamp, Pekan, Pahang atas beberapa faktor khusus yang sesuai dengan metodologi projek. Ianya dipilih, kerana kemudahan akses untuk kenderaan dan kemudahan untuk pelancaran bot. Kedua, kedalaman air di kawasan tersebut adalah cetek dan dipengaruhi oleh pasang surut yang agak tenang. Keadaan air yang lebih tenang juga membolehkan data pengukuran yang dihasilkan adalah lebih tepat.

Kajian yang dijalankan adalah merujuk kepada pengukuran datum yang telah ditetapkan. Kawalan pengukuran sangat penting apabila membandingkan metodologi untuk kajian secara langsung. Untuk tujuan kawalan mendatar dan pugak, satu titik kawalan telah ditetapkan dan digunakan sepanjang kerja pengukuran dijalankan di tapak lokasi ditunjukkan dalam Jadual di bawah:

Jadual 1: Titik Kawalan

Titik Kawalan	Northing	Easting	Height
TBM 1	50964.688	-28907.692	14.541

Bagi memperoleh kedalaman dari permukaan air hingga dasar, satu alat pengukur kedalaman gelombang tunggal telah digunakan. Alat CHC Echo Sounder D390 Single Beam adalah alat yang



digunakan secara meluas dalam kerja ukur batimetri untuk mengukur kedalaman perairan dan memetakan topografi dasar perairan atau di dalam kes ini adalah dasar sungai. Alat ini berfungsi dengan menghantar gelombang tunggal (single beam) dari transduser ke dasar perairan, dan kemudiannya mengukur masa yang diambil oleh gelombang tersebut untuk kembali setelah dipantulkan dari dasar. Berdasarkan masa yang diambil dan halaju gelombang, kedalaman dapat dikira dengan tepat. Penggunaan CHC Echo Sounder D390 Single Beam ini membantu dalam menghasilkan peta kedalaman yang tepat, dan penting untuk pelbagai aplikasi seperti navigasi, pembangunan infrastruktur, pengurusan sumber air, dan pemetaan ekologi marin.

Pelaksanaan Kerja Pengambilan Data

Komponen lapangan untuk proses pengumpulan data Teknik Penentuan Kedalaman menggunakan alat GNSS jenis SOUTH dan Echo Sounder sebagai penanda aras dalam kerja ukur kedalaman sungai ini. Alat GNSS akan disetkan merujuk kepada datum titik kawalan yang telah dinyatakan. Manakala alat CHC Echo Sounder juga merujuk kepada datum untuk memastikan ketepatan data kedalaman yang diukur.

Setelah persediaan untuk kedua-dua kaedah pengukuran dan pengumpulan data ditetapkan, pengukuran pasang surut kemudian disediakan untuk membolehkan penentuan aras air sepanjang tempoh pengukuran dan tinjauan awal dijalankan ketika pasang surut berada pada tahap terendah. Ini membolehkan permukaan asas dibangunkan untuk membandingkan data yang dihasilkan oleh Total Station dan Echo Sounder. Untuk melengkapkan pengukuran dan perolehan data ini, grid 2m yang telah dikira lebih awal dan diperhatikan di atas permukaan asas yang ditentukan dari pemerhatian awal menggunakan kaedah Total Station. Ketika pasang surut meningkat untuk mencapai puncaknya bagi membolehkan tinjauan kedalaman diselesaikan, kalibrasi peralatan dan pemeriksaan dilakukan untuk mengukur sebarang ketidakpastian yang ada dalam sistem pengumpulan data bagi tinjauan kedalaman.

Setelah tinjauan asas awal dan kalibrasi sistem pengukuran selesai. Peralatan penerima GNSS dan Alat Echo Sounder pula dipasang pada bot dan seterusnya proses pengukuran dijalankan secara serentak sepanjang Sungai. Oleh kerana pemasangan dan proses kerja sistem pengukuran dilakukan secara serentak, pengukuran yang dirakam oleh GNSS jenis

South dan CHC Echo Sounder boleh diproses selepasnya Titik-titik dicatat secara serentak antara setiap sistem yang akan disahkan sebelum sebarang pemprosesan pasca selesai. Setelah pengambilan data dibuat, bot dikeluarkan dari air.

Pemprosesan Data

Pemprosesan data setelah kerja pengukuran lapangan selesai, data pengukuran akan dihantar ke aplikasi Telegram dalam bentuk Fail CSV (Comma Delimited). Ini akan memudahkan kerja pemprosesan kerana data yang disimpan dalam format Ascii ini lebih mudah diakses dan boleh dibuka melalui perisian Excel.

Hasil, Analisis Dan Perbincangan

Jadual 2 : Dari garis tengah ke kiri

	0 – 1.99	2 – 3.99	4 – 5.99
Chainage 10			
GNSS	9.373	9.250	9.144
ECHO SOUNDER	9.284	9.167	9.358
Chainage 20			
GNSS	9.877	9.863	9.779
ECHO SOUNDER	9.881	9.845	9.805
Chainage 30			
GNSS	9.529	9.678	9.666
ECHO SOUNDER	9.807	9.537	9.601

Kajian ini bertujuan untuk membandingkan bacaan yang diperoleh daripada dua kaedah pengukuran, iaitu GNSS dan Echo Sounder, pada jarak yang berbeza di tiga chainage yang berbeza. Data dari garis tengah ke kiri, yang diperolehi menunjukkan variasi dalam bacaan kedua-dua kaedah ini, yang boleh memberikan gambaran tentang ketepatan setiap kaedah.

Pada Chainage 10, bacaan GNSS menunjukkan nilai 9.373, 9.250, dan 9.144 pada jarak 0-1.99 meter, 2-3.99 meter, dan 4-5.99 meter. Bacaan Echo Sounder pula menunjukkan nilai 9.284, 9.167, dan 9.358 pada jarak yang sama. Terdapat sedikit perbezaan antara bacaan GNSS dan Echo Sounder, dengan Echo Sounder cenderung memberikan nilai yang sedikit lebih rendah atau lebih tinggi bergantung pada jarak. Ini menunjukkan bahawa walaupun terdapat perbezaan kecil, kedua-dua kaedah masih memberikan hasil yang hampir serupa.

Pada Chainage 20, bacaan GNSS menunjukkan nilai 9.877, 9.863, dan 9.779 pada jarak yang sama. Bacaan Echo Sounder pula menunjukkan nilai 9.881, 9.845, dan 9.805. Bacaan GNSS dan Echo Sounder hampir sama. Ini menunjukkan cerapan yang dijalankan adalah kurang dipengaruhi faktor selisih antara kedua-dua kaedah pengukuran pada chainage ini. Situasi ini boleh diterjemahkan bahawa kedua-dua kaedah ini boleh digunakan untuk mendapatkan bacaan yang tepat pada chainage ini.

Pada Chainage 30, bacaan GNSS menunjukkan nilai 9.529, 9.678, dan 9.666 pada jarak yang sama. Bacaan Echo Sounder pula menunjukkan nilai 9.807, 9.537, dan 9.601. Terdapat variasi yang lebih besar antara bacaan GNSS dan Echo Sounder pada chainage ini, dengan Echo Sounder menunjukkan nilai yang lebih tinggi pada jarak pertama dan lebih rendah pada jarak kedua dan ketiga. Ini menunjukkan bahawa terdapat faktor-faktor lain yang mungkin mempengaruhi ketepatan bacaan pada chainage ini, seperti keadaan persekitaran atau ketepatan alat



pengukuran.

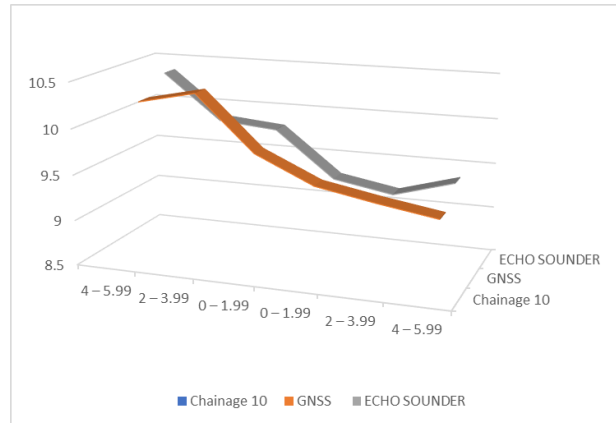
Jadual 3 : Dari garis tengah ke kanan

	0 – 1.99	2 – 3.99	4 – 5.99
Chainage 10			
GNSS	9.674	10.287	10.147
ECHO SOUNDER	9.793	9.853	10.360
Chainage 20			
GNSS	9.943	9.794	9.821
ECHO SOUNDER	9.847	9.687	9.820
Chainage 30			
GNS	10.001	9.927	9.764
ECHO SOUNDER	9.900	9.957	10.047

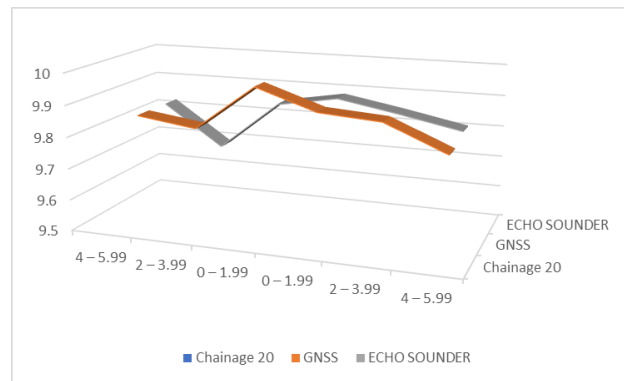
Bedasarkan data dari garis tengah ke kanan pula, bacaan yang diperoleh daripada dua kaedah pengukuran, iaitu GNSS dan Echo Sounder, pada jarak yang berbeza di tiga chainage yang berbeza. Iaitu pada Chainage 10, bacaan GNSS menunjukkan nilai 9.674, 10.287, dan 10.147 pada jarak 0-1.99 meter, 2-3.99 meter, dan 4-5.99 meter. Bacaan Echo Sounder pula menunjukkan nilai 9.793, 9.853, dan 10.360 pada jarak yang sama. Terdapat sedikit perbezaan antara bacaan GNSS dan Echo Sounder, bacaan sebelah kanan ini menunjukkan Echo Sounder memberikan nilai yang lebih tinggi pada jarak tertentu. Ini menunjukkan bahawa walaupun terdapat perbezaan kecil, kedua-dua kaedah masih menunjukkan ketepatan yang baik.

Pada Chainage 20, bacaan GNSS menunjukkan nilai 9.943, 9.794, dan 9.821 pada jarak yang sama. Bacaan Echo Sounder pula menunjukkan nilai 9.847, 9.687, dan 9.820. Bacaan GNSS dan Echo Sounder juga hampir serupa.

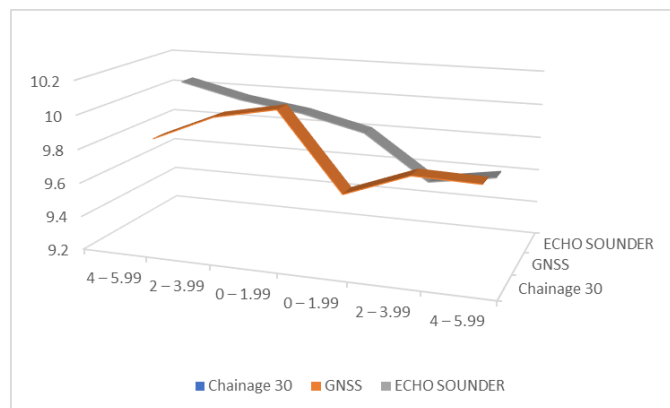
Pada Chainage 30, bacaan GNSS menunjukkan nilai 10.001, 9.927, dan 9.764 pada jarak yang sama. Bacaan Echo Sounder pula menunjukkan nilai 9.900, 9.957, dan 10.047. Terdapat variasi yang lebih besar antara bacaan GNSS dan Echo Sounder pada chainage ini, dengan Echo Sounder menunjukkan nilai yang lebih tinggi pada jarak tertentu. Ini juga menunjukkan bahawa terdapat faktor-faktor lain yang mungkin mempengaruhi ketepatan bacaan pada chainage ini.



Rajah 1: Kedalaman rentas Chainage 10



Rajah 2: Kedalaman rentas Chainage 20



Rajah 3: Kedalaman rentas Chainage 30



Kesimpulan

Secara keseluruhan, kajian ini menunjukkan bahawa terdapat sedikit perbezaan antara bacaan GNSS dan Echo Sounder, tetapi kedua-dua kaedah memberikan hasil yang agak konsisten. Perbezaan kecil ini mungkin disebabkan oleh faktor-faktor seperti keadaan persekitaran atau ketepatan alat pengukuran. Oleh itu, kedua-dua kaedah ini boleh digunakan untuk mendapatkan bacaan yang tepat, tetapi adalah penting untuk mengambil kira faktor-faktor yang boleh mempengaruhi ketepatan bacaan.

Kajian ini juga menunjukkan bahawa walaupun terdapat variasi dalam bacaan pada chainage yang berbeza, kedua-dua kaedah masih memberikan hasil yang boleh dipercayai. Ini menunjukkan bahawa GNSS dan Echo Sounder adalah kaedah yang berkesan untuk pengukuran, dengan syarat faktor-faktor yang mempengaruhi ketepatan bacaan diambil kira.

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Strategi Pengurusan dan Pembangunan Tanah Wakaf untuk Manfaat Awam

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Abstrak

Kajian ini bertujuan untuk menganalisis strategi pengurusan dan pembangunan tanah wakaf di Malaysia dengan fokus kepada manfaat awam. Pengurusan tanah wakaf merupakan elemen penting dalam pembangunan masyarakat, terutamanya dari segi ekonomi, pendidikan, dan sosial. Tanah wakaf yang diurus dengan baik mampu membawa manfaat besar kepada masyarakat dalam bentuk pembangunan infrastruktur seperti masjid, sekolah, dan hospital. Namun, pengurusan ini melibatkan pelbagai pihak seperti Pihak Berkuasa Tempatan (PBT), Jabatan Kerja Raya (JKR), dan majlis agama yang perlu memastikan setiap projek mematuhi perancangan kawasan serta undang-undang wakaf yang sedia ada. Kajian ini mengenal pasti beberapa cabaran dalam memastikan pengurusan tanah wakaf dilakukan dengan baik tanpa menjejaskan masyarakat. Isu birokrasi, penukaran kawasan, serta kelewatan dalam pembangunan merupakan antara halangan yang boleh menjejaskan pengurusan wakaf dalam memajukan sektor ekonomi dan sosial. Selain itu, sektor seperti pendidikan, kesihatan, dan ekonomi memerlukan perancangan dan pelaksanaan yang lebih teliti untuk mencapai kesan yang positif. Temubual telah dijalankan dengan pihak yang bertanggungjawab bagi mendapatkan pandangan tentang pengalaman mereka dalam menguruskan dan merancang pembangunan tanah wakaf, terutamanya dalam konteks kawasan perumahan dan penggunaan dana wakaf. Dapatan kajian menunjukkan bahawa pembangunan tanah wakaf memerlukan kerjasama rapat antara Pihak berkuasa tempatan dan Majlis agama untuk memastikan pembangunan yang sesuai dengan kawasan setempat supaya tidak menimbulkan kesan negatif kepada masyarakat setempat. Dana wakaf telah berjaya digunakan dalam beberapa projek seperti pembinaan masjid dan bangunan pendidikan yang membawa kesan yang baik kepada masyarakat. Namun, cabaran birokrasi dan risiko alam sekitar masih menjadi isu utama yang perlu diatasi untuk mempercepatkan proses pembangunan. Kajian ini memberikan sumbangan penting dalam memahami keperluan perancangan yang lebih teliti dalam pembangunan tanah wakaf dan mencadangkan strategi-strategi yang boleh diambil untuk mengatasi cabaran yang dihadapi. Dengan pelaksanaan strategi-strategi ini, diharapkan tanah wakaf dapat dimanfaatkan sepenuhnya untuk pembangunan awam yang berterusan dan memberi manfaat kepada masyarakat Islam di Malaysia.

Kata Kunci: Pembangunan Tanah, Manfaat Awam

Pengenalan

Tanah wakaf merupakan salah satu instrumen penting dalam pembangunan masyarakat Islam, khususnya di Malaysia. Wakaf adalah satu bentuk ibadah yang melibatkan penyerahan harta untuk manfaat umum atau khusus dengan niat mendekatkan diri kepada Allah SWT. Dalam konteks pembangunan awam, tanah wakaf boleh dimanfaatkan untuk pelbagai tujuan seperti pembinaan masjid, sekolah, hospital, dan kemudahan awam lain yang memberi



manfaat kepada masyarakat. Pengurusan tanah wakaf yang berkesan dapat membantu meningkatkan kesejahteraan masyarakat melalui pembangunan infrastruktur yang diperlukan.

Namun, pengurusan tanah wakaf di Malaysia sering kali berdepan dengan pelbagai cabaran. Antara cabarannya adalah termasuk pengemaskinian data yang tepat mengenai status tanah wakaf, kedudukan tanah yang berselerak, dan prosedur pengurusan yang tidak seragam. Selain itu, isu birokrasi, penukaran kawasan, serta kelewatan dalam pembangunan turut menjejaskan pengurusan tanah wakaf. Oleh itu, satu pendekatan yang sistematik dan berkesan diperlukan untuk memastikan tanah wakaf dapat dimanfaatkan sepenuhnya untuk pembangunan awam.

Kajian ini bertujuan untuk menganalisis strategi pengurusan dan pembangunan tanah wakaf di Malaysia dengan fokus kepada manfaat awam. Melalui temubual dengan pihak berkepentingan dan analisis dokumen, kajian ini akan mengenal pasti cabaran yang dihadapi dalam pengurusan tanah wakaf serta mencadangkan strategi-strategi yang boleh diambil untuk mengatasi cabaran tersebut. Dengan pelaksanaan strategi-strategi ini, diharapkan tanah wakaf dapat dimanfaatkan sepenuhnya untuk pembangunan awam yang berterusan dan memberi manfaat kepada masyarakat Islam di Malaysia.

Pernyataan Masalah

- i. Kedudukan Tanah yang Berselerak: Tanah wakaf yang berselerak dan tidak teratur menambah kesukaran dalam pengurusan dan penyelarasan pembangunan.
- ii. Isu Birokrasi iaitu dari sudut proses kelulusan dan penukaran status tanah yang memakan masa lama menyebabkan kelewatan dalam pelaksanaan projek pembangunan.

Objektif Kajian

- i. Menganalisis Cabaran Pengurusan Tanah Wakaf: Menenal pasti dan menganalisis cabaran utama yang dihadapi dalam pengurusan tanah wakaf di Malaysia.
- ii. Menilai Impak Pembangunan Tanah Wakaf: Menilai impak pembangunan tanah wakaf terhadap masyarakat setempat, termasuk aspek ekonomi, pendidikan, dan sosial.

Kajian Literatur

Sistem wakaf, iaitu sistem endowmen Islam, telah lama menjadi mekanisme utama untuk menyatakan usaha dermawan dan mengekalkan kebajikan golongan yang memerlukan, golongan miskin, dan masyarakat yang lebih luas di negara-negara majoriti Muslim (Sulaiman et al., 2019). Amalan ini telah menjadi ciri utama tamadun Islam, dengan Awqaf (jamak dari Waqf) berfungsi sebagai institusi kewangan strategik yang telah menyokong pelbagai inisiatif sosial, pendidikan, dan keagamaan selama berabad-abad. (Shaikh et al., 2019).

Institusi ini mempunyai sejarah yang kaya dalam menyokong pelbagai inisiatif yang berkhidmat kepada masyarakat iaitu dari membiayai pembinaan dan penyelenggaraan infrastruktur sosial penting seperti masjid, sekolah dan hospital hingga melabur dalam pembangunan sumber pertanian dan projek pengurusan air yang telah menyumbang kepada



produktiviti ekonomi dan kualiti hidup keseluruhan (Rashid, 2018) (Shaikh et al., 2019). Wakaf, sebagai institusi kebajikan dalam Islam, mempunyai potensi untuk menyumbang secara terus kepada penyediaan barangan dan perkhidmatan awam (Ambrose et al., 2018). Memandangkan impak sosial yang besar dan manfaat yang meluas yang telah disediakan oleh Awqaf secara sejarah, pengurusan dan pembangunan yang baik adalah sangat penting untuk memastikan ianya terus berfungsi sebagai kenderaan yang kukuh dan berterusan untuk memacu kebajikan dan kemajuan masyarakat. (Nienhaus, 2018) (Dar, 2020)

Walaupun bagaimanapun, pengurusan dan pembangunan tanah wakaf pada masa kini menghadapi pelbagai cabaran pentadbiran yang menghadkan kesannya (Yuspin & Fauzie, 2018). Kajian ini bertujuan untuk meneroka strategi bagi mengurus dan membangunkan tanah wakaf dengan berkesan untuk memaksimumkan manfaatnya kepada orang awam.

Peranan wakaf dalam sumbangan sebagai satu dana tidak dapat dinafikan. Wakaf boleh berfungsi sebagai sumber pembiayaan alternatif untuk kerajaan, terutamanya di kawasan di mana kaedah pembiayaan tradisional mungkin tidak mencukupi. Cabaran pentadbiran institusi wakaf bagaimanapun, telah menjadi kebimbangan berterusan. Ini kerana ia boleh menghalang penggunaan aset wakaf yang berkesan untuk kebaikan awam (Yuspin & Fauzie, 2018). Untuk menangani cabaran ini, pendekatan kerjasama antara kerajaan, pihak berkuasa pengurusan wakaf, dan sektor swasta mungkin diperlukan.

Satu model berpotensi untuk pembiayaan wakaf bagi tujuan awam dan tujuan awam campuran di Malaysia telah dicadangkan oleh (Ambrose et al., 2018). Model ini melibatkan kerjasama antara kerajaan dan pihak berkuasa wakaf untuk mengenal pasti dan membangunkan hartanah wakaf berimpak tinggi yang boleh menjana aliran pendapatan yang mampan. Pendekatan sedemikian boleh membantu menghidupkan semula fungsi sejarah wakaf sebagai penyedia barangan dan perkhidmatan awam.

Model pembangunan seperti Built-Operate-Transfer (BOT) telah menunjukkan hasil yang positif. Contohnya, Majlis Agama Islam Wilayah Persekutuan (MAIWP) dan Majlis Agama Islam Negeri Pulau Pinang (MAINPP) telah berhasil meningkatkan nilai ekonomi tanah wakaf melalui model ini, sekaligus menyediakan infrastruktur untuk kepentingan umum. Kajian menunjukkan bahawa MAIWP menggunakan model ini untuk menyediakan perumahan mampu milik di Kuala Lumpur, meskipun beroperasi di bandar yang paling mahal di negara ini. Begitu juga, Majlis Agama Islam Negeri Pulau Pinang (MAINPP) telah bekerjasama dengan UDA Holdings Berhad menggunakan model BOT untuk pembangunan projek perumahan dan komersial wakaf (Hafis Bello et al., 2020)

Walaupun sistem wakaf telah menunjukkan ketahanan dan impak yang luar biasa selama berabad-abad, ia kini menghadapi pelbagai cabaran pentadbiran dan pengurusan yang telah menghalang keupayaannya untuk merealisasikan potensi transformasinya sepenuhnya dalam era masa kini. Kajian ini bertujuan untuk mengenal pasti dan mengkaji pelbagai strategi praktikal yang dapat membantu menghidupkan semula dan mengoptimumkan peranan wakaf dalam memacu pembangunan sosioekonomi dan menyampaikan manfaat awam dalam masyarakat Muslim moden, berdasarkan pandangan yang diperolehi daripada kajian menyeluruh terhadap literatur akademik yang relevan serta penilaian amalan terbaik dan

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memenuhi manfaat sosial dan ekonomi. Tanah wakaf dapat digunakan untuk membangun sesuatu kawasan yang memberikan manfaat langsung kepada masyarakat setempat. Namun, pelaksanaan hak milik tanah wakaf sering menghadapi berbagai rintangan, termasuk isu birokrasi, kesukaran dalam pengurusan dokumen, dan kurangnya pemahaman tentang prosedur undang-undang yang berlaku di kalangan pengurus tanah wakaf.

Tanah wakaf memiliki potensi besar sebagai sumber pendapatan yang berpanjangan. Ini termasuk penyewaan tanah untuk berbagai kegiatan ekonomi dan penggunaan tanah wakaf untuk pertanian, penternakan, atau kegiatan ekonomi lainnya yang dapat memberikan pendapatan yang berterusan. Potensi ini dapat dimanfaatkan untuk meningkatkan kualiti hidup masyarakat setempat.

Untuk penggunaan sepenuhnya manfaat tanah wakaf, beberapa strategi yang dapat diterapkan meliputi peningkatan kapasiti pengurus melalui latihan tentang prosedur undang-undang dan pengurusan yang efektif. Pengurus tanah wakaf perlu dilengkapi dengan pengetahuan dan kemahiran yang diperlukan untuk mengurus tanah wakaf dengan baik dan memastikan bahawa semua prosedur undang-undang dipatuhi. Ini akan membantu mengurangkan isu birokrasi dan kesukaran dalam pengurusan dokumen.

Kolaborasi dengan sektor swasta juga merupakan strategi yang penting. Menggunakan model Built-Operate-Transfer (BOT) atau kerjasama lainnya untuk pembangunan infrastruktur dapat membantu pencapaian manfaat tanah wakaf. Contohnya, Majlis Agama Islam Wilayah Persekutuan (MAIWP) dan Majlis Agama Islam Negeri Pulau Pinang (MAINPP) telah menunjukkan hasil yang positif melalui model ini. Kerjasama dengan sektor swasta dapat menyediakan sumber dana dan kepakaran yang diperlukan untuk melaksanakan projek pembangunan yang besar.

Selain itu, pemantauan dan penilaian secara berkala terhadap projek pembangunan tanah wakaf adalah penting untuk memastikan keberkesanannya. Ini termasuk menilai sejauh mana projek tersebut memenuhi tujuan asalnya dan memberikan manfaat kepada masyarakat. Dengan strategi yang tepat, tanah wakaf dapat menjadi aset yang sangat berharga untuk pembangunan sosial dan ekonomi masyarakat. Tanah wakaf mempunyai potensi besar untuk menjadi sumber pendapatan yang berpanjangan dan menyediakan kemudahan awam yang penting. Oleh itu, usaha untuk mengurus dan membangunkan tanah wakaf perlu diteruskan dan diperkukuhkan untuk memastikan manfaatnya dapat dinikmati oleh semua lapisan masyarakat.

Kesimpulan

Secara keseluruhannya, kajian ini telah menunjukkan bahawa pelaksanaan tanah wakaf untuk pembangunan awam merupakan satu usaha yang penting dalam meningkatkan kualiti hidup masyarakat. Namun, usaha ini menghadapi pelbagai cabaran, terutama dari segi prosedur perundangan dan birokrasi yang rumit. Tanah wakaf mempunyai potensi besar untuk pembangunan kemudahan awam yang memberi manfaat sosial. Walau bagaimanapun, terdapat beberapa isu yang perlu diatasi untuk memastikan tanah wakaf dapat dimanfaatkan sepenuhnya.



Salah satu cabaran utama adalah kurangnya kefahaman masyarakat mengenai prosedur undang-undang yang berkaitan dengan tanah wakaf. Ramai yang tidak memahami proses yang perlu dilalui untuk mengurus dan membangunkan tanah wakaf, yang boleh menyebabkan kelewatan dan masalah dalam pelaksanaan projek. Selain itu, terdapat juga konflik antara tujuan kebajikan dan keuntungan komersial. Tanah wakaf sepatutnya digunakan untuk kepentingan awam dan kebajikan.

Untuk mengatasi cabaran-cabaran ini, beberapa langkah penambahbaikan perlu diambil. Pertama, prosedur pelaksanaan perlu dipermudahkan dan dijelaskan dengan lebih terperinci kepada masyarakat. Ini termasuk menyediakan panduan yang jelas dan mudah difahami mengenai proses pengurusan dan pembangunan tanah wakaf. Kedua, kesedaran masyarakat mengenai kepentingan tanah wakaf perlu ditingkatkan. Kempen kesedaran dan pendidikan boleh membantu masyarakat memahami manfaat tanah wakaf dan bagaimana mereka boleh terlibat dalam usaha ini.

Ketiga, pengurusan tanah wakaf perlu lebih telus dan berkesan. Ini termasuk memastikan bahawa semua dokumen dan rekod berkaitan tanah wakaf disimpan dengan baik dan mudah diakses. Penggunaan teknologi seperti sistem pengurusan maklumat boleh membantu dalam hal ini. Selain itu, kerjasama antara pihak berkuasa agama, kerajaan, dan sektor swasta juga penting untuk memastikan projek pembangunan tanah wakaf dapat dilaksanakan dengan lancar dan berkesan.

Dengan penambahbaikan dalam prosedur pelaksanaan, peningkatan kesedaran masyarakat, dan pengurusan yang lebih telus, tanah wakaf dapat dimanfaatkan dengan lebih efektif untuk kebaikan bersama. Tanah wakaf mempunyai potensi besar untuk menjadi sumber pendapatan yang berpanjangan dan menyediakan kemudahan awam yang penting. Oleh itu, usaha untuk mengurus dan membangunkan tanah wakaf perlu diteruskan dan diperkukuhkan untuk memastikan manfaatnya dapat dinikmati oleh semua lapisan masyarakat.

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Workforce Diversity in Chemical Industry Companies: The Role of Ethical Leadership as a Moderator

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Abstract

Workforce diversity in the chemical industry is a crucial factor in enhancing innovation, productivity, and organizational dynamics. However, diversity can also pose challenges in terms of communication, conflict, and team integration. This study aims to analyze the impact of workforce diversity on employee performance and explore the role of ethical leadership as a moderator in this relationship. Using a quantitative approach, data were collected from employees of chemical industry companies through surveys. Data analysis was conducted using a moderation regression model to examine the impact of ethical leadership in strengthening or weakening the relationship between workforce diversity and employee performance. The findings indicate that workforce diversity has a positive impact on employee performance; however, this effect depends on the level of ethical leadership implemented within the organization. Ethical leadership is proven to enhance the relationship between diversity and performance by creating an inclusive, fair, and ethical work environment. These findings have implications for chemical industry companies in developing leadership strategies that promote workforce diversity effectiveness to improve performance and organizational sustainability.

Keywords: Workforce Diversity, Employee Performance, and Ethical Leadership

Introduction

As a strategic sector that plays a crucial role in supporting global economic growth, companies in the chemical industry are characterized by high operational complexity and intense competition (Bashir et al., 2021). In this context, diversity becomes a significant factor influencing employee performance dynamics. Diversity can encompass aspects such as gender, ethnicity, culture, and professional expertise. Research by (Inoubli, 2023) indicates that workplace diversity, if well managed, can foster collaboration, creativity, and innovation. However, if diversity is not balanced with inclusive strategies, it may trigger conflicts, decreased morale, and suboptimal performance (Dharmanto, 2023).

PT Mitsubishi Chemical Indonesia is one of the companies operating in the chemical industry in Cilegon City. The company implements a Job Accomplishment Matrix (JAM) as a Key Performance Indicator (KPI) at every employee level. In general, the performance assessment results for employees with management status were higher than those with non-management status in 2022–2023. However, upon closer examination, performance assessment issues arose in the Marketing (MKT) and Maintenance (MNT) divisions, where JAM for non-management employees was found to be higher than that of management employees. In 2022, the MKT division recorded a JAM score of 78.7% for management, which was lower than the 80.4% recorded for non-management employees. Similarly, in the same



year, the MNT division reported a JAM score of 77.5% for management, which was lower than the 79.2% recorded for non-management employees.

According to preliminary studies, one of the factors influencing these JAM discrepancies between management and non-management employees is the high level of workforce diversity in the work environment. Differences in culture, language, and educational background often create barriers to communication and team collaboration. Employees from different cultural backgrounds may have varying perspectives and approaches to work tasks, making it challenging to achieve optimal alignment within teams.

(Roy, 2022) examined the impact of cultural diversity on employee performance and found that cultural diversity positively influences innovation and problem-solving abilities. This aligns with the study by (Humairo & Abidin, 2023), which investigated the impact of gender diversity on employee performance and concluded that gender diversity positively affects customer satisfaction and employee productivity. Another study by (Strenitzerova & Komackova, 2023) explored the influence of age diversity on performance in manufacturing companies. The findings indicated that age diversity plays a crucial role in enhancing performance, with younger employees contributing through technology and innovation, while older employees provide experience and process knowledge.

The study by (Rafaqat et al., 2022) focused on the impact of ethnic diversity in the service sector, demonstrating that ethnic diversity contributes to creativity and innovation in the workplace. Employees from various ethnic backgrounds bring diverse perspectives and social networks, which are valuable in developing new products and services. This is supported by (Islam & Hasan, 2022) who examined the impact of skills and educational background diversity in information technology companies, concluding that skill diversity has a positive effect on innovation and performance efficiency.

Previous studies have shown inconsistencies in findings regarding the impact of diversity on performance. Therefore, this research introduces an additional variable to address these inconsistencies by incorporating ethical leadership as a moderating variable. This is based on the premise that, in practice, the relationship between diversity, intrinsic motivation, and employee performance can be influenced by the leadership style implemented (Phanniphong et al., 2024).

Ethical leaders can establish values of honesty, fairness, and responsibility, which help minimize conflicts within diverse teams and motivate employees to behave ethically and contribute optimally. Thus, ethical leadership can strengthen the positive impact of diversity on employee performance (Naeem et al., 2019).

The novelty of this study lies in the argument that ethical leaders not only set an example of good behavior but also create an organizational culture that values ethics and moral principles. Based on this, the research question is formulated as follows: How can ethical leadership be maximized in moderating the relationship between workforce diversity and employee performance in chemical industry companies in Cilegon City?



Literature Review

Self-Determination Theory

Self-Determination Theory, developed by Edward Deci and Richard Ryan (2002), is a motivation theory that explains that human motivation originates from the fulfillment of three basic psychological needs: autonomy, competence, and relatedness. Self-determination is described as the effort to set one's own life goals (Zulmedia et al., 2017). This theory explains an individual's ability to identify and achieve goals based on their own knowledge and self-assessment (Mamahit & Situmorang, 2017). Self-Determination Theory emphasizes that when individuals feel they have control over their actions (autonomy), can achieve desired outcomes (competence), and have positive relationships with others (relatedness), they tend to be more intrinsically motivated, feel satisfied, and experience greater well-being (Fischer et al., 2019). Thus, it can be said that self-determination reflects a person's firm resolve or commitment to achieving a goal. Autonomy allows individuals to make decisions based on their own values, competence encourages individuals to face challenges and develop skills, while relatedness supports a sense of belonging and acceptance by others. In various contexts, such as education and the workplace, Self-Determination Theory demonstrates that supporting these three needs can enhance motivation, engagement, and individual performance (Saether, 2019). Therefore, Self-Determination Theory provides guidance for organizations to create an environment that supports basic psychological needs to achieve optimal productivity and satisfaction.

Workforce Diversity

Human resources within an organization are the only resource that possesses intellect, emotions, desires, skills, knowledge, motivation, power, and creativity (rationality, emotions, and aspirations). An organization will struggle to achieve its objectives without human resources (Ngalo et al., 2023). Diversity, according to (Inegbedion et al., 2020), can be categorized more specifically into different aspects, such as social category diversity, informational diversity, cultural diversity, and value diversity. Social category diversity refers to explicit differences among group members, such as race, gender, and ethnicity. Informational diversity refers to the presence of group members with varying educational backgrounds, work experiences, training, and expertise, which lead to differences in knowledge bases and perspectives within the group.

Cultural diversity refers to the diversity arising from the presence of various cultures, as individuals from the same culture tend to share fundamental values and beliefs, forming an identity based on their culture (Islam & Hasan, 2022). Value diversity occurs when team members have different perspectives on tasks, goals, targets, or the actual mission of the group (Hasibuan, 2017). Workforce diversity is an important variable that affects many aspects of an organization, including performance, creativity, and innovation. Measuring diversity is not only dependent on demographic aspects but also includes its influence on decision-making, employee engagement, and its impact on team and organizational effectiveness as a whole. Organizations that can effectively manage diversity can leverage the potential of each individual to achieve common goals (Quintana-García et al., 2022).



Employee Performance

Performance by (Simamora, 2018), refers to the achievement of specific job requirements, which are ultimately reflected in tangible outputs. Meanwhile, according to (Mangkunegara, 2017) performance is the quality and quantity of work results achieved by an employee in carrying out their duties in accordance with the responsibilities assigned to them. Performance represents the entire working process of an individual, and its results can serve as a basis for determining whether the individual's work is good or otherwise (Anshori et al., 2022). According to (Rivai, 2019), performance is the actual behavior displayed by individuals as work achievements produced by employees in accordance with their roles in the company. Thus, performance is the result achieved by an individual or group of individuals over a certain period based on the measurement tools used, whether in terms of quality or quantity, by comparing targets with achieved results.

Employee performance achievement is linked to the accomplishment of a series of individual tasks with the support of available information technology (Damiri et al., 2025). It can be concluded that employee performance is the ability to meet job requirements, where work targets can be completed on time without exceeding the allotted deadline, ensuring that the objectives align with corporate ethics and morals. Thus, employee performance contributes to the company's success.

Ethical Leadership

Ethics in leadership significantly influence employee behavior and organizational performance. Ethics is defined as morally accepted behavior that is considered "good" and "right" in a given situation. According to (Ahli et al., 2024), ethics is a system of values used to decide what is right and to determine what is consistent with the existing value system within an individual and organization. Ethical leadership is a leadership style that can be applied by companies or organizations to improve employee performance. Several studies have examined the role of ethical leaders in enhancing employee performance.

Ethical leadership as demonstrating normative character traits through personal actions and interpersonal relationships while introducing these traits to followers through two-way communication, reinforcement, and decision-making (Rakhma et al., 2022). According to (Dede et al., 2020) ethical leadership prioritizes principles, respects others, serves others, demonstrates fairness, upholds honesty, and fosters an ethical community. Meanwhile, (Hong et al., 2023) define ethical leadership as a process in which the goals of a company or organization are predetermined, and members of the company or organization are directed toward achieving these goals with the guidance of leadership.

According to (Rasheed et al., 2024), ethical leadership is defined as a leader who communicates ethical standards to employees, ensuring they adhere to these standards by implementing rewards and penalties. Ethical leaders consistently practice ethical behavior not only at work but also in their daily lives. (Mehari et al., 2024) argue that ethical leaders carry out their duties sincerely, are straightforward and trustworthy, and uphold high moral and integrity values. (Nassif et al., 2020) argue that transparency in rewards and punishments and communication of ethical standards and expectations are sources of positive influence in



ethical leadership. (Nejati et al., 2019) emphasize that ethical leaders communicate the importance of ethical and responsible behavior to positively influence their followers.

Discussion and Conclusion

This study employs an explanatory survey method to explain the causal relationship between workforce diversity and employee performance, with ethical leadership acting as a moderating factor, as outlined through hypothesis testing (Ferdinand, 2019). The population in this study consists of employees in chemical industry companies in Cilegon City. The study is limited to three chemical industry companies as the sample: PT Mitsubishi Chemical Indonesia, PT Indorama Petrochemicals, and PT Indorama Polypet Indonesia. To obtain a representative sample size, the sample size was determined using the formula of the number of indicators multiplied by 5 to 10 indicators (Hair et al., 2015), resulting in 9 x 16 indicators or a total of 144 samples. Data collection was conducted through questionnaires, and data analysis was carried out using the SEM-PLS model.

Measurement Model Test Results

The measurement model test aims to determine whether all the indicators used in this study are valid and reliable for measuring the intended variables. According to (Ghozali & Latan, 2018), in the initial testing stage, an indicator is considered to meet convergent validity if the outer loading value is > 0.5 . The measurement model test results are deemed entirely valid, as the lowest outer loading value obtained is 0.711.

To further confirm this, the next step is to assess discriminant validity by examining the Average Variance Extracted (AVE) values. A construct is considered to meet the assumption of discriminant validity if the AVE value is > 0.5 . The AVE values for the research variables, Diversity (0.653), Ethical Leadership (0.616), and Performance (0.672)—are all greater than 0.5. These results confirm that all four research variables have met the assumption of good discriminant validity.

The final criterion for testing the measurement model is construct reliability. A construct is considered to have good reliability if its Cronbach's alpha and composite reliability values exceed 0.7. All four research variables have a Cronbach's alpha > 0.7 , with values ranging from a minimum of 0.790 to a maximum of 0.870. The composite reliability values are also > 0.7 , with the lowest value at 0.864 and the highest at 0.913. These results confirm that all variables studied have met the assumption of good reliability.

Structural Model Test Results

The structural model test is conducted to determine the strength of the relationships (causality) between variables and the ability of each exogenous latent variable to influence the endogenous latent variable. The structural model test results are evaluated based on R Square values and Path Coefficients in the study's inner model.

The R Square value for performance is 0.778. This means that performance in the structural model is influenced by diversity and ethical leadership with these variables accounting for 77.8% ($0.778 \times 100\%$) of the variance in brand loyalty. The remaining 22.2% is explained by other variables not included in this study.



The path coefficient for Diversity → Performance is 0.366, indicating a positive relationship. This means that an increase of 1 unit in diversity will increase Performance by 0.366 units. Conversely, a decrease in diversity will lead to a decrease in Performance.

The path coefficient for ethical leadership → Performance is 0.328, also indicating a positive relationship. An increase of 1 unit in ethical leadership will increase Performance by 0.328 units, and a decrease in ethical leadership will reduce Performance.

The path coefficient for ethical leadership*diversity → Performance is 0.167, showing a positive relationship. This indicates that ethical leadership, as a moderating variable, strengthens the relationship between diversity and Performance. A 1-unit increase in the interaction between ethical leadership and diversity will strengthen the diversity-Performance relationship by 0.167 units, and a decrease will weaken it.

Hypothesis Testing Results

Hypothesis testing in this study is evaluated based on original sample values, t-statistics, and p-values obtained from bootstrapping. A hypothesis is accepted if t-statistic > 1.960 or p-value < 0.05. The hypothesis test results are presented as follows:

1. Diversity has a positive and significant effect on Performance, meaning that the stronger the diversity, the stronger the Performance. That hypothesis has an original sample value of 0.366, t-statistic of 4.079, and p-value of 0.000. Since t-statistic (4.079) > t-table (1.960) and p-value (0.000) < significance level (0.05), hypothesis is accepted. The positive sign indicates that the tested relationship aligns with the proposed hypothesis. This confirms the stronger the diversity, the stronger the Performance.
2. Ethical leadership is identified as a quasi-moderator, meaning that it has a moderating effect on diversity while also acting as a direct predictor of Performance. The interaction coefficient (Ethic*Div) is 0.167 with a significant t-statistic of 2.174 and a p-value of 0.016. Since both b2 and b3 coefficients are significant, ethical leadership is categorized as a quasi-moderator, indicating that ethical leadership not only strengthens the relationship between diversity and Performance but also has its own direct effect on Performance.

Effect of Workforce Diversity on Employee Performance

Workforce diversity can provide significant benefits in terms of creativity, innovation, and team effectiveness, which in turn influence individual and overall organizational performance. When individuals from diverse backgrounds work together, they bring different perspectives, enabling the generation of new ideas and more creative solutions (Arman et al., 2024). A study by (van Knippenberg et al., 2020) found that diversity enriches problem-solving processes, as team members from different backgrounds tend to approach problems in varied ways. This allows organizations to be more adaptive and innovative in addressing market challenges. Research by (Singh et al., 2019) indicates that teams composed of members from diverse backgrounds tend to make more inclusive and balanced decisions. Diversity enriches discussions and prevents the narrow-minded thinking that often occurs in homogeneous teams (Orhero & Okolie, 2023). This improved decision-making, in turn, enhances employee effectiveness in achieving organizational goals.



Employees who feel valued and accepted in a diverse environment are more motivated to work hard, resulting in improved performance. Diversity can contribute to the formation of more effective teams. (Humairo & Abidin, 2023) suggest that teams with members from different backgrounds collaborate better, particularly in tasks requiring various skills and perspectives. Although communication and coordination challenges may arise initially, overcoming these barriers leads to more productive and high-performing teams. Organizations that manage diversity effectively tend to be more adaptive to market changes and industry dynamics. (Ishak & Zarefar, 2024) found that companies promoting diversity are better able to respond to external changes and challenges due to their wide range of skills and perspectives that help them tackle complex problems. Overall, workforce diversity has a significant positive effect on employee performance. Diversity in teams and organizations enhances creativity, innovation, and decision-making effectiveness while improving employee satisfaction and commitment (Brixy et al., 2020). However, to fully benefit from diversity, companies must create an inclusive environment that fosters collaboration among employees from different backgrounds.

The Role of Ethical Leadership in Moderating the Effect of Workforce Diversity on Employee Performance

Ethical leadership has been recognized as a critical factor in enhancing organizational effectiveness, and its role in moderating the relationship between workforce diversity and employee performance is increasingly highlighted in human resource management literature. Workforce diversity, when managed within the framework of ethical leadership, can enrich team collaboration and motivate employees to deliver their best performance (Orhero & Okolie, 2023). Ethical leaders provide equal opportunities for all employees, without discrimination based on their backgrounds, ensuring that employees feel valued and empowered (Dogbe et al., 2024).

(Oladimeji & Abdulkareem, 2023) explain that when leaders treat all employees fairly and support diversity, it strengthens positive workplace relationships, increases a sense of belonging, and motivates employees to work harder, ultimately improving performance. (Aprilianty & Waskito, 2023) emphasize that ethical leaders create an environment where employees can openly and constructively express their views, leading to more effective solutions and improved team performance. By moderating conflicts fairly, ethical leaders enable diverse teams to work more harmoniously and productively.

Ethical leaders play a role in fostering a supportive work environment that embraces diversity and ensures all employees feel accepted and appreciated (Haryadi et al., 2021). Well-managed diversity in organizations enhances employee commitment and job satisfaction. When ethical leaders focus on improving employee well-being, they create an atmosphere that supports employees in achieving their best performance (Tanzil, 2019).

(Sentoso & Putra, 2021) found that leaders with strong ethical values are more likely to make decisions that consider diverse perspectives from team members, ultimately improving overall team performance. Fair and transparent decision-making encourages employees to be more engaged in their work and contribute maximally to organizational goals (Abuzaid & Ghadi, 2024). Overall, ethical leaders create an inclusive environment, enhance conflict



management, and ensure fair decision-making, which positively influences employee performance. Therefore, workforce diversity, when supported by ethical leadership, will be more effective in improving performance.

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شروط الجارح والمعدل

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الملخص

الحمد لله نحمده و نستعينه و نستغفره و نعوذ بالله من شرور أنفسنا و من سيئات أعمالنا من يهديه الله فلا مضل له ومن يضلله فلا هادي له , أشهد أن لا إله إلا الله وأشهد أن محمد عبده ورسوله , الله صلى وسلم وبارك على سيدنا محمد وعلى آله وأصحابه ومن تبعهم بإحسان إلى يوم الدين أما بعد, إن السنة مبينة للقرآن, فإن حفظ القرآن يقتضي حفظ السنة, فقيض الله تعالى للسنة رجالا بذلوا قصارى جهدهم في جمعها وتدوينها وضبط وتحرير ألفاظها وتوضيح معانيها وبيان طرق وصولها إلينا, فواصلوا الليل بالنهار, وأفنوا أعمارهم في خدمتها, لينفوا عنها تحريف الغالين وتأويل المبطلين وكذب الزنادقة والملاحدين. ومن الوسائل التي وضعها العلماء لحفظ السنة: علم الجرح والتعديل, فهو من أهم أنواع علوم الحديث وأعظمها شأنًا وأبعدها أثرًا, إذ به يتميز الصحيح من السقيم, والمقبول من المردود وهو من باب صيانة الدين والنصيحة للمسلمين. ويهدف هذا البحث إلى بيان شروط الجارح والمعدل التي وضعها المحققون لقبول حكمهم على الراوي. ويعالج البحث مشكلة عدم معرفة بعض المتخصصين في علم الحديث بشروط الجارح والمعدل التي وضعها العلماء, مما ترتب عليه القول في هذا العلم بدون دراية وتأهل, فنتج عن ذلك مشكلات كثيرة, وقد اعتمدت في هذا البحث: المنهج الاستقرائي وذلك بالرجوع إلى أهم كتب الجرح والتعديل في جمع الشروط المعتبرة التي وضعها المحققون لقبول أقوال الجارح والمعدل, وكذلك بيان الشروط غير المعتبرة التي وضعها المحققون. من أهم نتائج البحث: أن من يختص بعلم الحديث, ينبغي عليه أن يكون على دراية واسعة بالشروط التي يجب توافرها في الجارح والمعدل التي تجعل حكمه منصفًا كاشفا عن حال الراوي. وأن من يقوم بعملية الجرح والتعديل يجب أن يتحلى بكثير من الصفات منها العلم والتقوى, والعلم بأسباب الجرح والتعديل, والسلامة من التعصب واتباع الهوى وغير ذلك.

الكلمات المفتاحية: شروط, الجارح, المعدل

المقدمة

كما عرفنا أن الجارح والمعدل هم نقاد الحديث الذين حكم على رواة الحديث ومنتنه. ويشترط عليهم بعدة الشروط ليكون تجريحهم وتعديلهم مقبولا. أن شروط الجارح والمعدل تنقسم إلى القسمين وهي الشروط المعتبرة في الجارح والمعدل و شروط غير معتبرة في الجارح والمعدل. وأما الشروط المعتبرة في الجارح والمعدل, وهي:

(١) يشترط في الجارح والمعدل العلم والتقوى والورع والصدق ليمتنعه عن التعصب. إن كانت هذه الصفات من صفات

المسلم عموما, إلا أنها سمات المجرحين والمعدلين خاصة.

قال الإمام الذهبي: والكلام في لرواة يحتاج إلى ورع تام, وبراءة من الهوى والميل وخبرة كاملة بالحديث وعلله ورجاله^١.

^١ الموقظة في علم مصطلح الحديث, شمس الدين الذهبي, مكتبة المطبوعات الإسلامية بحلب, ج ١, ص ٨٢.

وقال الحافظ ابن حجر العسقلاني: وينبغي أن لا يقبل الجرح والتعديل إلا من عدل متيقظ، فلا يقبل جرح من أفرط فيه، فجرح بما لا يقتضي رد حديث المحدث، كما لا تقبل تزكية من أخذ بمجرده الظاهر فأطلق التزكية. ولو نظر لذلك لرد أكثر الرواة حتى الأئمة الكبار، فإنه قل من سلم في الجرح، وقد تكلم في الكبار من الأئمة، لكن يندفع ذلك بأنه عدم القبول إنما هو للتوقف لا الجرح فلا التفات لكلام من جرح أحدا من الأئمة، لأن الشهرة بالإمامة والجلالة تغني عن التعديل وتدفع في صدر من جرح أحدا منهم^٢.

وقال الشيخ اللكنوي: يشترط في الجرح والمعدل العلم والتقوى والورع والصدق والتجنب عن التعصب ومعرفة أسباب الجرح والتزكية، ومن ليس كذلك لا يقبل منه الجرح ولا التزكية^٣.

(٢) أن يكون عالما بأسباب الجرح والتعديل.

اتفق العلماء على عدم القبول في الرواة ممن يجهل عن أسباب الجرح والتعديل، وذلك لأنه ربما يوثق من حقه التضعيف ويضعف من حقه التوثيق أو يرد أحاديث الثقات و يقبل أحاديث الضعفاء.

قال القاضي عياض: لو لم يحسن مقصده وقصد محص التنقص والعيب، لا بيان الحال لأجل الحديث لكان غيبة، وكذلك لو لم يكن المتكلم من أهل هذا الشأن، ولا ممن يلتفت إلى قوله فيه لما جاز له ذكر ذلك ولكن غيبة^٤.

وقال الحافظ ابن حجر: تقبل التزكية من عارف بأسبابها لا من غير عارف لئلا يزكي بمجرد ما ظهر له ابتداء من غير ممارسة واختبار، ولو كانت التزكية صادرة من مزك واحد على الأصح خلافا لمن شرط أنها لا تقبل إلا من اثنين إلحاقا لها بالشهادة في الأصح أيضا. والفرق بين هما أن التزكية تنزل منزلة الحكم فلا يشترط فيها العدد والشهادة تقع من الشاهد عند الحاكم فافتراقا^٥.

وقال الإمام تاج الدين السبكي: من لا يكون عالما بأسبابهما (أي أسباب الجرح والتعديل) لا يقبلان منه لا بإطلاق ولا بتقييد فالحكم بالشيء فرع عن العلم التصوري به^٦.

(٣) أن يكون خبرة عارفا بأحوال الرواة السابقين وعلل الحديث.

قال عبد الشيخ المعلي: ليس نقد الرواة بالأمر الهين، فإن الناقد لا بد أن يكون واسع الإطلاع على الأخبار المروية عارفا بأحوال الرواة السابقين وطرق الرواية، خبيرا بعوائد الرواة ومقاصدهم وأغراضهم وبأسباب الداعية إلى التساهل والكذب والموقعة في الخطأ والغلط، ثم يحتاج إلى أن يعرف أحوال الراوي: متى ولد؟ وكيف هو في الدين والأمانة والعقل والمروءة والحفظ؟ ومتى شرع في الطلب؟ ومتى سمع؟ وكيف سمع؟ ومع من سمع؟ وكيف كتابه؟ ثم يعرف أحوال الشيوخ الذين يحدث عنهم وبلدانهم ووفياتهم وأوقات تحديثهم وعاداتهم في التحديث. ثم يعرف مرويات الناس عنهم، ويعرض عليها مرويات

^٢ اليواقيت والدرر في شرح نخبة ابن حجر، محمد عبد الرؤوف بن تاج العارفين بن علي المناوي، مكتبة الرشد-الرياض، ج ٢، ص ٣٦٠-٣٦١.

^٣ الرفع والتكميل في الجرح والتعديل، محمد عبد العلي بن محمد عبد الحليم الأنصاري اللكنوي الهندي، المحقق: عبد الفتاح أبو غدة، مكتب المطبوعات الإسلامية-حلب، ط الثالثة (١٤٠٧هـ)، ص ٦٧.

^٤ إكمال المعلم بفوائد مسلم، عياض بن موسى بن عياض اليحصبي، تحقيق: الدكتور يحيى إسماعيل، دار الوفاء للطباعة والنشر-المنصورة، ط الأولى ١٤١٩هـ/١٩٩٨م، ج ١، ص ١٦٠.

^٥ نزهة النظر في توضيح نخبة الفكر، أبو الفضل أحمد بن علي بن محمد العسقلاني، مطبعة سفير بالرياض، ص ١٧٦.

^٦ فتح الباقي بشرح ألفية العراقي، زكريا بن محمد بن زكريا الأنصاري، دار الكتب العلمية، ط الأولى ١٤٢٢هـ/٢٠٠٢م، ج ١، ص ٣١٨.

هذا الراوي ويعتبرها بها غير ذلك مما يطول شرحه. ويكون مع ذلك متيقظا مرهف الفهم دقيق الفطنة مالكا لنفسه لا يستميله الهوى ولا يستفزه الغضب ولا يستخفه بادر ظن حتى يستوفي النظر ويبلغ المقر ثم يحسن التطبيق في حكمه فلا يجاوز ولا يقصر^٧.

(٤) سلامة من التعصب واتباع الهوى.

قال الحافظ الذهبي: ولا سبيل إلى أن يصير العارف الذي يزكى نقله الأخبار ويجرحهم جهبذا إلا بإدمان الطلب والفحص عن هذا الشأن وكثرة المذاكرة والسهو واليقظ والفهم مع التقوى والدين المتين والإنصاف والتردد إلى مجالس العلماء والتحري والإتقان وإلا تفعل:

فدع عنك الكتابة لست منها ... ولو سودت وجهك بالمداد

قال الله تعالى عز وجل: {فَاسْأَلُوا أَهْلَ الدِّكْرِ إِنْ كُنْتُمْ لَا تَعْلَمُونَ} [النحل: ٤٣] فإن أنست يا هذا من نفسك فهما وصدقا ودينا وورعا وإلا فلا تتعن وإن غلب عليك الهوى والعصبية لرأى والمذهب فبالله لا تتعب وإن عرفت إنك مخلط مخبط مهمل لحدود الله فأرحنا منك فبعد قليل ينكشف الهرج وينكب الزغل ولا يحيق المكر السيء إلا بأهله فقد نصحتك فعلم الحديث صلف فأين علم الحديث؟ وأين أهله؟ كدت أن لا أراهم إلا في كتاب أو تحت تراب^٨.

وقال الشيخ اللكنوي: إذا علم بالقرائن المقالة أو الحالية أن الجرح طعن على أحد بسبب تعصب منه عليه لا يقبل منه ذلك الجرح، وإن علم أنه ذو تعصب على جمع من الأكابر ارتفع الأمان عن جرحه وعد من أصحاب القرع^٩.

(٥) أن يكون ضابطا لحفظه.

قال ابن حجر: وينبغي أن لا يُقبل الجرح والتعديل إلا من عدلٍ مُتَيَقِّظٍ^{١٠}.

كما عرفنا أن لا تقبل رواية غير ضابط فمن باب أولى ألا تقبل جرحه وتعديله.

(٦) أن يكون الجرح والمعدل عدلا في دينه

العدل مهم في قبول الرواية إذا كان الراوي يطعن في عدالته فلا تقبل روايته، وهو أيضا عن قبول الجرح والتعديل لا يقبل الجرح والتعديل إلا من عادل مرضي.

قال الخطيب البغدادي: إن كان الذي يرجع إليه في الجرح عدلا مرضيا في اعتقاده وأفعاله، عارفا بصفة العدالة والجرح وأسبابهما، عالما باختلاف الفقهاء في أحكام ذلك، قبل قوله فيمن جرحه مجملا، ولم يسأل عن سببه^{١١}.

(٧) أن لا يكون من المتشدددين.

^٧ بلوغ الأمان من كلام المعلبي اليماني، فوائد وقواعد في الجرح والتعديل وعلوم الحديث، إسلام بن محمود بن محمد النجار، أصول السلف، ص ٩٤.

^٨ تذكرة الحفاظ، شمس الدين أبو عبد الله محمد بن أحمد بن عثمان بن قايماز الذهبي، دار الكتب العلمية بيروت-لبنان، ط الأولى، ١٤١٩ هـ- ١٩٩٨ م، ج ١، ص ١٠.

^٩ الرفع والتكميل، ص ٧٨.

^{١٠} نزهة النظر، ص ١٧٧.

^{١١} الكفاية في علم الرواية، أبو بكر أحمد بن علي بن ثابت بن أحمد بن مهدي الخطيب البغدادي، المحقق: أبو عبد الله السورقي، إبراهيم حمدي المدني، ط: المكتبة العلمية - المدينة المنورة، ص ١٠٠.

هناك من الأئمة من يتعنت بالتشدد كالإمام يحيى بن سعيد القطان و يحيى بن معين والنسائي وشعبة بن الحجاج وغيرهم. فهم عرفوا بتشدد حكم على الرجال فهؤلاء إذا وثقوا الراوي يقبل حكمهم إطلاقاً، وإذا كان ضعفوا الراوي لا يعتبر بجرحهم إلا إذا كان وافقهم أحد الأئمة المعتدلين.

قال علي ابن المديني: إذا اجتمع يحيى بن سعيد وعبد الرحمن بن مهدي على ترك رجل لم أحدث عنه فإن اختلفا أخذت بقول عبد الرحمن لأنه أقصدهما وكان في يحيى تشدد^{١٢}.

ثم شروط غير معتبرة في الجرح والمعدل:

لا يشترط الحرية ولا الذكورة، لا في الرواية ولا في الجرح والمعدل بل تقبل رواية وجرح وتعديل العبد والمرأة متى استوفيا شروط الجرح والمعدل.

قال الإمام السيوطي: في مسائل زادها المصنف على ابن الصلاح: (يقبل تعديل العبد والمرأة العارفين) لقبول خبرهما، وبذلك جزم الخطيب في " الكفاية "، والرازي، والقاضي أبو بكر بعد أن حكى، عن أكثر الفقهاء من أهل المدينة، وغيرهم أنه لا يقبل في التعديل النساء، لا في الرواية، ولا في الشهادة، واستدل الخطيب على القبول بسؤال النبي – صلى الله عليه وسلم – بريرة عن عائشة في قصة الإفك^{١٣}.

قال الخطيب البغدادي: والذي يدل على ما قلناه أن أقصى حالات العدل وتعديله أن يكون بمثابة المخبر والخبر والشاهد والشهادة، فإذا ثبت أن خبر المرأة العدل مقبول، وأنه إجماع من السلف، وجب أيضاً قبول تعديلها للرجال، حتى يكون تعديلها الذي هو إخبار عن حال المخبر والشاهد، بمثابة خبرهن في وجوب العمل به، وكذلك إذا كان للنساء مدخل في الشهادات في مواضع من الأحكام، جاز لذلك قبول تزكيتهن، كما قبلت شهادتهن^{١٤}.

وقال أيضاً: ويجب أيضاً قبول تزكية العبد للمخبر دون الشاهد، لأن خبر العدل مقبول وشهادته مردودة، والذي يوجب القياس وجوب قبول تزكية كل عدل ذكر وأنثى، حر وعبد، لشاهد ومخبر، حتى تكون تزكيته مطابقة للظاهر من حاله^{١٥}. قال الحافظ العراقي: يُقبلُ تزكية المرأة مطلقاً في الرواية والشهادة؛ إلا تزكيتها في الحكم الذي لا تقبل شهادتها فيه وأطلق صاحب المحصول وغيره قبول تزكية المرأة من غير تقييد بما ذكره القاضي وأما تزكية العبد، فقال القاضي أبو بكر إنه يجب قبولها في الخبر دون الشهادة؛ لأن خبره مقبول، وشهادته مردودة قال والذي يوجب القياس وجوب قبول تزكية كل عدل مرضي، ذكر، أو أنثى، حر، أو عبد لشاهد ومخبر وهذا ما صرح به صاحب المحصول وغيره^{١٦}.

قلت: يقبل الجرح والتعديل من ذكر وأنثى وحر وعبد ومرضٍ إذا كان تجريحه وتعديله صحيح.

^{١٢} تاريخ بغداد، أبو بكر أحمد بن علي بن ثابت بن أحمد بن مهدي الخطيب البغدادي، دار الكتب العلمية – بيروت، ط الأولى، ١٤١٧ هـ ترجمة رقم: ٥٣٦٦.

^{١٣} تدريب الراوي، ج ١، ص ٣٧٩.

^{١٤} الكفاية في علم الرواية، ص ٩٧.

^{١٥} المرجع السابق، نفس الصفحة.

^{١٦} شرح التبصرة التذكرة، أبو الفضل زين الدين عبد الرحيم بن الحسين بن عبد الرحمن بن أبي بكر بن إبراهيم العراقي، المحقق: عبد اللطيف الهميم - ماهر ياسين فحل، دار الكتب العلمية، بيروت – لبنان، ط الأولى، ١٤٢٣ هـ - ٢٠٠٢ م، ج ١، ص ٣٢٩-٣٣٠.

قبل نختم الكلام، نريد أن ننبه على أن ينبغي إلى من يهتم بعلم الدراية أن يعرف الأئمة الذين تكلموا في الرجال من حيث طبقاتهم. تنقسم طبقات أئمة الحديث بثلاث طبقات، وهو المتشددون والمعتدلون والمتساهلون. كما قال الحافظ الذهبي: فمنهم من نفسه حاد في الجرح ومنهم من هو معتدل ومنهم من هو متساهل.

فالمتساهلون كما قال الدكتور أيمن محمود مهدي: عدم مراعاة القواعد والضوابط التي وضعها العلماء لتوثيق الرواة بالتسامح في تطبيقها، والإعتدال هو فضيلة بين نقيضين، فمن زاد على هذه القواعد فقد تشدد وأسرف، ومن تهاون في تطبيقها أو اصطلاح على قواعد أخف منها خالف بها جمهور العلماء فقد تساهل وتسامح وكلاهما لا يعتبر به^{١٧}.

-الأئمة الذين موصوفون بالتساهل، منهم:

- (١) دحيم: عبد الرحمن بن إبراهيم الدمشقي (ت ٢٤٥هـ)
 - (٢) العجلي: أبو الحسن أحمد بن عبد الله بن صالح (ت ٢٦١هـ)
 - (٣) أبو عيسى محمد بن عيسى الترميذي (ت ٢٧٩هـ)
 - (٤) أبو عبد الله الحاكم محمد بن عبد الله النيسابوري (ت ٤٠٣هـ)
- ثم المعتدلين وليس لدي المحدثين معني الإعتدال غير المعنى في اللغة، وهو التوسط والإستقامة والإستواء وعدم الجرح إلا ببيان ودليل.

-من الأئمة الموصوفون بالإعتدال، هم:

- (١) شفيان الثوري: ابن سعيد بن مسروق بن حبيب (ت ١٢٦هـ)
 - (٢) البخاري: محمد بن إسماعيل بن إبراهيم (ت ٢٥٦هـ)
 - (٣) عبد الرحمن بن مهدي (ت ١٩٨هـ)
 - (٤) أبو زكريا يحيى بن معين (ت ٢٣٣هـ)
 - (٥) علي بن المديني (ت ٢٣٤هـ)
- وأخيرا، المتشددون، قال أيضا الدكتور أيمن محمود مهدي: الإسراف والتعننت في الجرح بحيث يجرح الناقد الراوي ويرد رواياته من أجل هفوة يسيرة أو ذنب صغير أو خلاف سائغ في المعتقد أو الأحكام، فيخرج المتشدد الراوي بأدنى جرح ويطلق عليه ما لا ينبغي إطلاقه^{١٨}.

-الأئمة الموصوفون بالتشدد، منهم:

- (١) شعبة بن الحجاج بن الورد العتكي (ت ١٦٠هـ)
- (٢) يحيى بن سعيد القطان (ت ١٩٨هـ)
- (٣) يحيى بن معين (ت ٢٣٣هـ)
- (٤) النسائي: أبو عبد الرحمن أحمد بن شعيب (ت ٣٠٣هـ)
- (٥) أبو الفتح محمد بن الحسين الأزدي (ت ٣٧٤هـ)

^{١٧} الجرح والتعديل بين النظرية والتطبيق، الدكتور أيمن محمود مهدي، ص ٩١.

^{١٨} الجرح والتعديل نشأته وقواعده ومناهج المتكلمين فيه، الدكتور أيمن محمود مهدي، ص ٤٩.

(٦) الحافظ العقيلي (ت ٣٢٢هـ)

فهذه الصفات الثلاثة وصف المحدثون إلى النقاد بحسب حكمهم على الرواة وهي على أغلب حكمهم. فمهم لمن يشتغل بعلم الدراية أن يعرف هذه طبقات النقاد حتى لا يحكم على الرواة بما لا يستحق لهم لأن هناك من النقاد من يتساهلون في توثيق الرواة ومن يتعنتون في تجريح الرواة بالغلط اليسير. فانتبه!

النتائج

- (١) هناك الشروط يجب أن يتوفرها في الجرح والمعدل التي تجعل حكمه منصفاً كاشفاً عن حال الراوي، منها العلم والتقوى وعالم بأسباب الجرح والتعديل والسلامة من التعصب واتباع الهوى وغير ذلك.
- (٢) وكان يقبل الجرح والتعديل من ذكر وأنثى وحر وعبد ومرضى ما دام جرحهم وتعديلهم صحيح.
- (٣) كان أئمة الحديث انقسموا إلى ثلاث طبقات، المتشددون والمعتدلون والمتساهلون.

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Smart Food Cost System – A Solution For Food Product Business Profitability

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Abstract

Smart Food Cost System is a system based on the IR4.0 concept that helps community entrepreneurs manage food product costs accurately. Many entrepreneurs face difficulties in cost calculation due to a lack of knowledge and the complexity of standard recipe calculation formulas, leading to hidden costs and business losses. This system addresses this issue by providing an easy-to-use and cost-effective application. The development of the system involves a needs analysis through interviews and previous studies, which indicate that the development of key functions for raw material cost calculation, strategic collaboration for recipe accuracy, and cost analysis are the main keys to this innovation. The testing and improvement process is carried out based on user feedback, with regular training for users. The Smart Food Cost System has an economic impact by reducing operating costs and enhancing market competitiveness, as well as contributing to the local economy through the efficient use of raw materials. From a social perspective, it helps small and medium-sized enterprises survive and grow with better cost management. In terms of technology, it drives innovation in food and beverage management that leads to digital transformation in the food industry. This approach fosters a healthier and more competitive economic environment for food and beverage industry entrepreneurs in Malaysia.

Keywords: Cost Management, Community Entrepreneurs, IR4.0, Technological Innovation, Digital Transformation

Introduction

The food product business has very great potential at this time. This business, which has the potential to be joined by many aspiring entrepreneurs or new business owners, is seen as likely to provide good returns on business profits (Sahid, 2019). Behind the visible success, many food product businesses also face failure. There are businesses that are facing issues with controlling their current operating expenses. This is due to weaknesses in management in planning, managing, and controlling the costs incurred each day. This includes failing to identify the actual cost of the product and pricing that does not align with the calculation of the actual cost and the percentage of markup (Onyeaochea, Anyanwu, Oopola, 2015). Setting prices based solely on estimates will invite danger to business revenue and may lead to losses in the business. This issue is a global problem faced by almost all traders, whether at the commercial, medium, or small business level. The ability to manage and control product costs is a key determinant in increasing profits. The ability to create viral sales or products does not guarantee high profits if the costs of the product and operations are not managed and controlled (Rahman, Reezlin; Zahari, 2022).

Research Problems

The problem faced by traders, entrepreneurs, and food product business owners is that they lack or fail to master the knowledge of cost control. Theories and calculation methods that



require various and detailed formulas to solve standard recipe calculations are the main cause of their business failures (Mohd et al., 2022). Hidden costs that are unexpected often occur without being noticed due to miscalculations and the use of the actual prices of products purchased after the trimming process, which has led to cash leakage from their business. As a result, at the end of each month, business revenue declines, breaking even or incurring losses (Onyechoea, Anyanwu, Oopola, 2015). This process will occur every month because entrepreneurs fail to accurately calculate their product costs. This global issue has stumped almost all traders, and only after being given training did they realize that their cost calculations and product pricing were wrong and needed to be corrected (Mohd et al., 2022). Therefore, an application must be developed to address the issues faced by almost all traders or entrepreneurs in the food product sector.

Objectives of the Innovation

1. Resolving this cost calculation issue with the SMART FOOD COST SYSTEM merchant-friendly application.
2. Providing an "Auto Calculation" application that will assist traders in quickly and efficiently calculating their product costs.
3. Accurate cost calculation with no hidden costs.
4. Providing weekly and monthly food cost percentage reports as a business control measure.
5. Helping entrepreneurs, traders, and food industry players manage their food product costs through pricing strategies using various Pricing Techniques.

The Process Of Developing The Smart Food Cost System Innovation

Planning

1. Needs Analysis: Conducting interviews with community entrepreneurs and reviewing previous studies to understand the needs and challenges in food cost calculation.
2. System Framework Provision: Drafting system specifications and establishing key functions such as raw material cost calculation and cost analysis.
3. Strategic Collaboration: Collaborating with industry experts to ensure the accuracy of standard recipes and cost calculation formulas.

Implementation

1. System Development: Building an application with a user-friendly interface, focusing on a cost calculation function that is simple and accurate.
2. Data Integration: Inputting raw material data and recipes for cost calculations relevant to the user.
3. Initial Testing: Testing the main functions of the system with a small group of users to identify any technical issues or shortcomings.

Review

1. Feedback Collection: Gathering feedback from users through training sessions and beta testing.
2. Performance Analysis: Assessing system performance based on user feedback and usage data to identify necessary improvements.
3. Cost-Effective Assessment: Reviewing the extent to which the system helps reduce



hidden costs and improve the accuracy of cost calculations.

Action

1. System Improvement: Implementing enhancements based on performance analysis and user feedback.
2. Training and Support: Providing regular training and technical support to users to ensure effective use of the system.
3. Continuous Monitoring and Adjustment: Continuously monitor system usage and make adjustments according to market needs and the latest technology.

Innovation Gann Chart

Smart Food Cost System Project Planner

NO	ACTIVITY	PLAN START	PLAN DURATION	PERIODS											
				1	2	3	4	5	6	7	8	9	10	11	12
1	DISCOVERY - Gathering Information & Project Plan	1-2	2												
2	ARCHITECTURE - Organizing & Structuring Excel Content & Features	2-3	2												
3	PROTOTYPING - Outline the layout & wireframe structure each Apps page	4	1												
4	DESIGN -visual aspect	5	1												
5	CONTENT - content creation takes place	6	1												
6	EXCEL DEVELOPMENT - putting all aspect together in the Excel application	7-8	2												
7	TESTING - checking link, form, calculation, formula, loading, speed & overall performance	9	1												
8	DEPLOYMENT - passing the requirement & ready for Launching	10-11	2												
9	MAINTENANCE - on going support and update data	11-12	2												

Characteristics Of Innovation

The Food Cost System is an AutoSum calculation system powered by Microsoft Excel software, which includes 13 displays as shown in the innovation diagram below. This plan will begin with the calculation of standard costs, followed by price control and operations that will assist entrepreneurs in providing detailed information according to dishes, as well as daily, weekly, and monthly reports, so that costs can always be controlled and profits can improve over time. Every calculation has been input with a formula that will help entrepreneurs get answers more quickly and accurately. The difficulty in using formulas manually will burden entrepreneurs who struggle to calculate using formulas to make quick decisions in their operational production tasks (Rahman, Reezlin ; Zahari, 2022).

The convenience of this system can also be printed for the purpose of storing standard recipes that will be used by the kitchen department to refer to standard recipes in food preparation. The pricing strategy is also included in this system to facilitate entrepreneurs in setting appropriate prices based on the price suggestions from this system. Focusing on the profit

percentage will be more directed based on the profit targets set by entrepreneurs, which will also be generated by this system to facilitate the management of entrepreneurs' businesses (National Entrepreneur and SME Development Council, 2020).

Interface of Smart Food Cost System



NAMA PERNIAGAAN					
SISTEM PENGIRAAN KOS MAKANAN					
RESEPI:	AYAM MASAK MERAH				
JENIS / KATEGORI PRODUK:	ABC				
PERSON INCHARGE:	AMIN	TARIKH:	18-Jun-2022		
JUMLAH PORSI:	25	KOS:	HARGA PRODUK RM12.00		
BERAT SATU PRODUK:	60	KOS / PORSI:	RM3.26	UNIT KOS PRODUK (%):	38.0%
UNIT UKURAN TIMBANGAN:	gm	KOS / RESEPI TERMAKUP TANGGUNGJAWAB:	RM81.41	KOS PRODUK SEBENAR (%):	27.1%
BERAT KESELURUHAN PRODUK:	6.25	MARGIN SETAP PORSI:	RM8.74	HARGA JUALAN PRODUK SEBENAR:	RM8.57
KOS KASAR ET KESELURUHAN		UNJURAN PERATUS JUALAN 80%			
KOS RESEPI	RM65.13	HARGA UNJURAN JUALAN			
KOS GAS, ELEKTRIK, AIR, LEFT OVER, B. PERASA DAN BUBUH 20%	25% RM16.28	Sila tetapkan			
JUMLAH KOS KESELURUHAN	RM81.41				

Sila masukkan nama resepi produk

Sila masukkan kategori produk

Sila masukkan tarikh resepi ini dibuat

Sila masukkan rancangan harga jualan produk

Sila tetapkan kos untuk produk ini

Sila masukkan unjuran peratusan untuk penetapan harga jualan produk

***** PANDUAN MAKSUD *****

*** [EP] = Edible Portion after Trim

KUANTITI SEBENAR TIMBANGAN SETELAH TRIM

*** [APB] = As Purchased cost

KOS BELIAN BAHAN SEBENAR

*** [EPB] = Edible Portion Cost

KOS PORSI SEBENAR

*** Yield %

PERATUS JUMLAH BAHAN SELEPAS TRIM

PILIHAN HARGA

CUKAI	HARGA JUALAN (A)	HARGA JUALAN (B)	HARGA JUALAN (C)
KOS PERKHIDMATAN (RM)	RM1.20	RM0.36	RM0.91
SST (6%)	RM0.72	RM0.51	RM0.55
CADANGAN HARGA	RM13.92	RM9.94	RM10.58

KOS GAS, ELEKTRIK, AIR, LEFT OVER, B. PERASA DAN BUBUH 20%

25%

RM16.28

Sila tetapkan

JUMLAH KOS KESELURUHAN

RM81.41

*** PANDUAN MAKSUD ***

*** [EP] = Edible Portion after Trim

KUANTITI SEBENAR TIMBANGAN SETELAH TRIM

*** [APB] = As Purchased cost

KOS BELIAN BAHAN SEBENAR

*** [EPB] = Edible Portion Cost

KOS PORSI SEBENAR

*** Yield %

PERATUS JUMLAH BAHAN SELEPAS TRIM

BIL	BAHAN-BAHAN	KUANTITI (EDIBLE PORTION)	KOS JUMLAH PENYEDIAAN (YIELD COSTING)	KOS
		KUANTITI TIMBANGAN CIPACU	APB / Unit	Unit
1	GULA	0.20 gm	RM2.50	gm
2	TEPUNG	0.45 gm	RM5.00	gm
3	TELUR	1.00 nos	RM0.50	nos
4	PEANUT BUTTER	0.70 gm	RM3.50	gm
5	BAWANG BESAR	0.90 gm	RM2.50	gm
6	SERBUK RICI	0.50 gm	RM0.00	gm
7	DORY FIS WHOLE	2.00 gm	RM8.00	gm
8	TEPUNG	0.50 gm	RM5.00	gm
9				
10				
11				
12				
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21				
22				
23				
24				
25				
26				
27				

PILIHAN HARGA

CUKAI	HARGA JUALAN (A)	HARGA JUALAN (B)	HARGA JUALAN (C)
KOS PERKHIDMATAN (RM)	RM1.20	RM0.36	RM0.91
SST (6%)	RM0.72	RM0.51	RM0.55
CADANGAN HARGA	RM13.92	RM9.94	RM10.58

Swot Analysis

Strengths

1. Accurate Cost Calculation: Helping entrepreneurs calculate product costs accurately while reducing the risk of hidden costs and losses.
2. User-Friendly: Designed to be easy to use, even for entrepreneurs with limited technological knowledge.



3. Cost Effective: Offering a more affordable solution compared to other cost management software on the market.
4. Reduction of Operating Costs: Reducing operating costs through better management of raw material costs, enhancing competitiveness.
5. Training Support and Continuous Improvement: Providing regular training and improvements based on feedback, enhancing user satisfaction.

Weaknesses

1. Dependence on accurate data: The effectiveness of the system relies on the accuracy of the data entered, which can be a challenge if users do not update the information regularly.
2. Need for Technology Access: It may be less suitable for entrepreneurs in areas with limited technology access or lacking IT knowledge.

Opportunities

1. Digital transformation in the food industry: Supporting entrepreneurs' transition towards digitalization, which is increasingly becoming a necessity in the food and beverage industry.
2. A wide market: Opportunities for growth for small and medium entrepreneurs across the country who require better cost management.
3. Integration with Other Platforms: The potential to integrate with POS systems, inventory, or e-commerce for a more holistic experience.
4. New Version Development: An opportunity to add new features such as predictive analytics, business performance tracking, or integration with raw material suppliers.

Threats

1. Competition from other software providers: Competition from larger or more well-known cost management systems that offer more unique features.
2. Changes in raw material prices: Sudden changes in raw material prices can affect the accuracy of cost calculations.
3. Economic instability: Economic instability can reduce entrepreneurs' ability to invest in new technologies.
4. Market awareness and acceptance: Challenges in educating the market about the importance of accurate cost management and the benefits of using this system.

Data Analysis

The Effectiveness, Level of Satisfaction and Usability Of The Food Cost System

The preliminary study assessing the efficacy of this system included 27 participants who shared their perceptions of the usage experience. This study examines the effectiveness of the food cost system in assisting food industry operators with raw material expenses, inventory control, and the sustainability of their enterprises. The survey findings encompass several business categories, including restaurants, cafes, food stalls, and catering services. The demographic data indicates that the respondents represent a diverse range of age groups, genders, and educational backgrounds.

The Significance of the Food Cost System in Relation to Age and Gender

The study findings reveal that the food cost system is acknowledged as a crucial element in business management, particularly for entrepreneurs between the ages of 36 and 55. This



demographic is more inclined to prioritize cost management due to their oversight of established enterprises necessitating rigorous cost control. The 26-35 age group exhibits significant understanding of this system; nevertheless, execution may vary due to the smaller scope of their enterprises.

The findings indicate no substantial gender disparity in the valuation of the food cost system between men and women. Both genders indicated that the food cost system is essential for managing their firm. This indicates that comprehension of cost management is common among entrepreneurs, regardless of gender.

Assessment of Satisfaction with the Food Cost System in Relation to Business Type and Educational Background

Entrepreneurs in the restaurant and cafe sector exhibit a high degree of satisfaction regarding the efficacy of the food cost system in assisting them to regulate raw material expenses and oversee inventory management. This is attributable to the fact that restaurants and cafes often function on a bigger scale and necessitate a more rigorous cost control system to prevent the wasting of raw materials. Moreover, catering demonstrates significant satisfaction owing to the inherent variability in order volumes, where cost methods provide more precise forecasting.

Individuals possessing diplomas and bachelor's degrees indicated greater satisfaction levels than those with lesser educational capabilities. This may result from enhanced management skills and information gained via formal education, allowing individuals to effectively utilize the benefits of the food cost system. They are also more inclined to comprehend the significance of data analytics in business.

Accessibility and Usability of the Food Cost System

An additional significant issue examined is the accessibility of the food cost system. The respondents indicated that the food Cost System they utilize is user friendly and easily accessible. Catering enterprises and food vendors encountered difficulties in utilizing this system, possibly due to their smaller operational scale and constrained budgets for investing in sophisticated cost system technology. Nonetheless, the majority of responders agreed that this system had enhanced inventory management and diminished raw material wastage costs.

Individuals in older age groups (56 years and above) and those with lower educational qualifications may have challenges in adapting to this system; yet, they recognize its advantages in minimizing operational expenses. This scenario underscores the necessity of ongoing training to guarantee that all entrepreneurs can proficiently employ the available technology.

Discussion And Recommendation

The findings of this study indicate that the food cost system substantially enhances the operational efficiency of food enterprises. Consequently, it is advisable for businesses in this sector to prioritize the execution of food cost systems. For individuals yet to embrace this approach, education and training must be intensified to improve comprehension of the



significance of effective cost management. Moreover, food cost system providers must guarantee that the technology provided is perpetually updated and tailored to meet the requirements of diverse food enterprises, including small-scale operations such as food stalls. This system must enhance its user-friendliness to guarantee effective utilization by traders of diverse educational backgrounds and ages. Moreover, service providers must rigorously evaluate the implementation expenses of the system to prevent imposing excessive financial burdens on small firms. This measure will facilitate more access to this technology for small enterprises, so enhancing their competitiveness within the industry.

Potential For Commercialization Of Innovation

The existing Food Cost system developed by the researchers has been exposed to and utilized by participants of the Lifelong Learning short courses as well as organizations such as the Seri Malaysia Hotel Network and The Jerai Hotel Group. This system uses Excel software and cannot be accessed virtually. The early success of this system has shown results, as Hotel Seri Malaysia has implemented this application for the chefs in the kitchen department who needed a way to control daily food costs. The participants who attended the course also provided positive feedback on this system and demonstrated that it can address cost control issues, especially for small and medium-sized entrepreneurs.

Therefore, to further enhance the capabilities of this system, the researchers hope that the application for innovation grants will assist in commercializing this system by helping more entrepreneurs and organizations through the development of smart applications that can be accessed in any area with internet coverage (Connolly & Bannister, 2008). The ease of access, portability, real-time data, and virtual data storage will further facilitate users of this system. This expertise is what researchers need to achieve the objectives of the system, which aims to benefit all traders and entrepreneurs in the food product sector. The development of the Smart Food Cost System application potential needs to be realized to provide greater benefits to the country's entrepreneurs.

Improvements to the Cost Control system need to be made and enhanced. A more comprehensive and thorough online application needs to be refined not only to calculate costs but also to forecast weekly and monthly as a step to regulate business operations. Cost calculations, Cost of Goods Sold calculations, Food Cost Percentage, Forecast Labour Cost, Bulk Cooking Costs, and Estimated Costs for an event will also be included in this application. Surely, this application will help product entrepreneurs and organizations achieve high revenue with fewer issues in calculations using various formulas.

Based on the above solution, the researcher plans to collaborate with a company that can develop an application as described above through this commercialization grant application. The process of building this smart application will take several planned time periods as outlined in the provided Gantt chart.

Conclusion

Realizing this Smart Food Cost System to assist many food product entrepreneurs in controlling costs and maximizing profits can address the main issues in the food business. The need for this system, which is not only required by large organizations such as hotels but also



by small and medium-sized enterprises, will certainly address and narrow the gaps in business problems. Therefore, this system is very relevant and has great potential for commercialization.

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السياق وتعدد دلالة مبنى الكلمة في النص موطأ الإمام مالك نموذجاً

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الملخص

السياق وتعدد دلالة مبنى الكلمة في النص ضرورة علمية يحتاجها الناس جميعاً في علوم اللغة العربية ، ليستطيعوا فهم النصوص المراد بها إما في النص القرآني أو الحديث الشريف ، لأن السياق وتعدد دلالة مبنى الكلمة في النص يركز ويؤدي إلى فهم صحيح ودقيق ويرشد إلى المعنى الحقيقي ويمنع من ارتكاب الأخطاء في فهم النص ، ولذلك اخترت أن أكتب الموضوع " السياق وتعدد دلالة مبنى الكلمة في النص موطأ الإمام مالك نموذجاً " وفيه نوعان مهمان من حيث اللغوى والحالى ومما لا شك أن له أهمية كبرى في بيان دلالة النص ، ومن هنا تأتي فكرة هذا البحث الذى يسعى إلى توضيح دور السياق بنوعيه اللغوى والحالى في بيان دلالة مبنى الكلمة سواء أكانت حرفاً أم اسماً أم فعلاً. وسبب الاختيار : رغبة في معرفة ماهية السياق وطبيعته ودوره في تشكيل النص بشكل عام ، رغبة إظهار دور السياق بنوعيه اللغوى والحالى في بيان دلالة النص في كتاب الموطأ للإمام مالك رحمة الله عليه . ويهدف البحث إلى بيان مفهوم السياق اللغوى والحالى والفرق بينهما ، وبيان إلى أى مدى يشارك السياق اللغوى والحالى في تشكيل المعنى وتوضيحه في النص بشكل عام ، خاصة في تشكيل المعنى وتوضيحه في كتاب الموطأ للإمام مالك رحمة الله عليه . ومن أهم النتائج : في ختام هذا البحث الذي تناول دور السياق اللغوى والحالى في بيان تعدد دلالة مبنى الكلمة في النص، خاصة في موطأ الإمام مالك، تبين أن السياق يعد مفتاحاً رئيسياً لفهم المعنى وتحديد دلالات الكلمات وفق الاستخدام والسياق الوارد. يتبين لنا أن المبنى الصرفي للكلمات - سواء الحرف، الاسم، أو الفعل - قد يكتسب دلالات متعددة بناءً على القرائن السياقية المصاحبة له.

الكلمات المفتاحية: السياق، تعدد، دلالة، المبنى، النص

المقدمة

للسياق بنوعيه اللغوى والحالى أهميته الكبرى في بيان دلالة النص ولم لا ، فقد نقرأ قوله تعالى : (فَلَمَّا قَضَيْنَا عَلَيْهِ الْمَوْتَ) [سبأ/ ١٤] ، فنقول: إن "قضى" فيه بمعنى حتم ، وقوله : (وَقَضَىٰ رَبُّكَ أَلَّا تَعْبُدُوا إِلَّا إِيَّاهُ) [الإسراء/ ٢٢] ، فنقول : إنَّ قَضَى فيه بمعنى : أمر ، وقوله: (فاقض ما أنت قاض) [طه/ ٧٢] ، فنقول : إن المعنى : فاصنع ما أنت صانع ، ونقرأ قوله : (وقضينا إلى بني إسرائيل في الكتاب) [الإسراء/ ٤] ، فنقول : إن المعنى : أعلمناهم^١ ، ونقرأ قوله تعالى: (قُضِيَ الْأَمْرُ الَّذِي فِيهِ تَسْتَفْتِيَانِ) [يوسف/ ٤١] ، فنقول: إن قُضِيَ فيه بمعنى: تم ، ثم نتساءل إلى أي أمر يرجع هذا الاختلاف في دلالة الفعل ؟ وقد نقرأ قوله تعالى: (وَإِذْ قَالَ رَبُّكَ لِلْمَلَائِكَةِ إِنِّي خَالِقٌ بَشَرًا مِنْ صَلْصَالٍ مِنْ حَمَإٍ مَسْنُونٍ) ، [الحجر/ ٢٨] ، فنقول : ما هي الدلالة الزمنية لاسم الفاعل (خالق) ، أي دلالة الماضي ، أم دلالة الاستقبال ، وكيف نتوصل إلى ذلك ؟

المبحث الأول

حول الموطأ وصاحبه

مولده ووفاته

قال الذهبي، رحمه الله، عن الإمام مالك، رحمه الله، "هُوَ شَيْخُ الْإِسْلَامِ، حُجَّةُ الْأُمَّةِ، إِمَامُ دَارِ الْهَجْرَةِ، أَبُو عَبْدِ اللَّهِ مَالِكُ بْنُ أَنَسٍ بْنِ مَالِكِ بْنِ أَبِي عَامِرٍ بْنِ عَمْرٍو بْنِ الْحَارِثِ بْنِ غَيْمَانَ بْنِ خُثَيْلٍ بْنِ عَمْرٍو بْنِ الْحَارِثِ، وَهُوَ ذُو أَصْبَحَ بْنِ عَوْفِ بْنِ مَالِكِ بْنِ زَيْدِ بْنِ شَدَادِ بْنِ زُرْعَةَ، وَهُوَ جَمِيرُ الْأَصْغَرِ الْجَمِيرِيُّ، ثُمَّ الْأَصْبَحِيُّ، الْمَدَنِيُّ، حَلِيفُ بَنِي تَيْمٍ مِنْ قُرَيْشٍ فَهُمْ حُلَفَاءُ عُثْمَانَ أَخِي طَلْحَةَ بْنِ عَبْدِ اللَّهِ، أَحَدِ الْعَشْرَةِ، وَأُمُّهُ هِيَ:عَالِيَةُ بِنْتُ شَرِيكٍ الْأَزْدِيَّةِ.²¹

ثم ذكر مولده فقال:

" مَوْلِدُ مَالِكٍ عَلَى الْأَصَحِّ فِي سَنَةِ ثَلَاثٍ وَتِسْعِينَ، عَامَ مَوْتِ أَنَسٍ خَادِمِ رَسُولِ اللَّهِ -صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ- وَنَشَأَ فِي صَوْنٍ وَرَفَاهِيَةٍ وَتَجَمُّلٍ"³.

وقد " اختلف في تاريخ وفاته والصحيح أنها كانت يوم الأحد لتمام اثنين وعشرين يوماً من مرضه في ربيع الأول سنة تسع وسبعين ومائة فقيل: لعشر مضت منه وقيل: لأربع عشرة وثلث عشرة وإحدى عشرة وقيل لثنتي عشرة من رجب. وقال حبيب كاتبه ومطرف: سنة ثمانين. وحكي عن بن إسحاق ثمان وتسعين وهو وهم"⁴.

و" اختلف في نسبه اختلافاً كثيراً ولا خلاف أنه من ولد قحطان"⁵.

حول الموطأ

إذا ذكر الموطأ ذكر به الإمام مالك وعظم به ، وإذا ذكر الإمام مالك ذكر به الموطأ وعظم به ، فهما متلازمان كالشيء وظله ، وقد يكون الموطأ أول كتاب وأشهره في ترتيبه وتركيبه ، وفي اجتهاده ونقله وفي حديثه وفقهه ، وهو أعظم مرجع في عصره وأقدمه . ولم يعتن – كما قال القاضي – بكتاب من كتب الحديث والعلم اعتناء الناس بالموطأ، فإن الموافق والمخالف اجتمع على تقديره وتفضيله ورواته وتقدم حديثه وتصحيحه. فأما من اعتنى بالكلام على رجاله وحديثه والتصنيف في ذلك ، فعدد كثير من المالكيين وغيرهم من أصحاب الحديث والعربية ، وسيأتى إن شاء الله بعض ذلك في شيء من التفصيل .

متى كمل تصنيف الموطأ ؟

والأقرب أنه كمل تدوينه سنة تسع وخمسين ومئة ، بعد وفاة المنصور ، وكان عمره ست وستين سنة (انتهى التدوين) فمتى بدأ به ؟ وهذا لم يكشف عنه بالضبط ، ولكن مالكا قال في معرض حديثه لقوم : كتاب ألفته في أربعين سنة أخذتموه في أربعين يوما ، قل ما تتفقون فيه . فإن كان يعنى الضبط فيكون قد بدأ تأليفه في سن الشباب ، وغالبا أنه يريد المبالغة فقط لأنه قال في مرة أخرى : ستين ، بدل أربعين حين قال لأبي خالد : علم جمعه شيخ في ستين سنة أخذتموه في أربعة

أيام... لا فهمتم أبداً ، فيكون عمره إذ وضع الموطأ ست سنين إذا أخذ الأمر على الحقيقة لا المبالغة ، وهذا محال ، ولا بد من حمله على المبالغة⁷.

الثناء على الموطأ

أَخْرَجَ ابْنُ فِهْرٍ عَنِ الشَّافِعِيِّ: مَا عَلَى ظَهْرِ الْأَرْضِ كِتَابٌ بَعْدَ كِتَابِ اللَّهِ أَصَحُّ مِنْ كِتَابِ مَالِكٍ. وَفِي لَفْظٍ: مَا عَلَى الْأَرْضِ كِتَابٌ هُوَ أَقْرَبُ إِلَى الْقُرْآنِ مِنْ كِتَابِ مَالِكٍ. وَفِي لَفْظٍ: مَا بَعْدَ كِتَابِ اللَّهِ أَكْثَرُ صَوَابًا مِنْ مَوْطَأِ مَالِكٍ. وَفِي آخَرٍ: مَا بَعْدَ كِتَابِ اللَّهِ أَنْفَعُ مِنَ الْمَوْطَأِ. وَأَطْلَقَ جَمَاعَةٌ عَلَى الْمَوْطَأِ اسْمَ الصَّحِيحِ، وَاعْتَرَضُوا قَوْلَ ابْنِ الصَّلَاحِ: أَوَّلُ مَنْ صَنَّفَ فِيهِ الْبُخَارِيُّ وَإِنْ عَبَّرَ بِقَوْلِهِ: "الصَّحِيحُ الْمَجْرَدُ" لِلَاخْتِزَارِ عَنِ الْمَوْطَأِ فَلَمْ يُجَرِّدْ فِيهِ الصَّحِيحَ بَلْ أَدْخَلَ الْمُرْسَلَ وَالْمُنْقَطِعَ وَالْبَلَاغَاتِ، فَقَدْ قَالَ مُعْطَاي: لَا فَرْقَ بَيْنَ الْمَوْطَأِ وَالْبُخَارِيِّ فِي ذَلِكَ لِوُجُودِهِ أَيْضًا فِي الْبُخَارِيِّ مِنَ التَّعَالِيْقِ وَنَحْوِهَا، لَكِنْ فَرَّقَ الْحَافِظُ بَأَنَّ مَا فِي الْمَوْطَأِ كَذَلِكَ "هُوَ مَسْمُوعٌ لِمَالِكٍ غَالِبًا، وَمَا فِي الْبُخَارِيِّ قَدْ حُذِفَ إِسْنَادُهُ عَمَلًا لِأَعْرَاضِ قُرَرَتْ فِي التَّعْلِيْقِ، فَظَهَرَ أَنَّ مَا فِي الْبُخَارِيِّ مِنْ ذَلِكَ لَا يُخْرِجُهُ عَنْ كَوْنِهِ جَرَّدَ فِيهِ الصَّحِيحَ بِخِلَافِ الْمَوْطَأِ⁸.

أما الأيليُّ فقال "سَمِعْتُ الشَّافِعِيَّ، قَالَ: مَا مِنْ كِتَابٍ أَكْثَرَ صَوَابًا بَعْدَ كِتَابِ اللَّهِ عَزَّ وَجَلَّ مِنْ كِتَابِ مَالِكٍ بْنِ أَنَسٍ يَغِي الْمَوْطَأَ⁹.

وَقَالَ أَبُو عَبْدِ اللَّهِ مُحَمَّدُ بْنُ إِبْرَاهِيمَ الْكَتَّانِيُّ الْأَصْفَهَانِيُّ: قُلْتُ لِأَبِي حَاتِمِ الرَّازِيِّ: مَوْطَأُ مَالِكٍ لِمَ سَمِيَ الْمَوْطَأَ؟ فَقَالَ: شَيْءٌ صَنَعَهُ وَوُطِّئَهُ لِلنَّاسِ حَتَّى قِيلَ "مَوْطَأُ مَالِكٍ" كَمَا قِيلَ "جَامِعُ سُفْيَانَ". وَرَوَى أَبُو الْحَسَنِ بْنُ فِهْرٍ، عَنْ عَلِيِّ بْنِ أَحْمَدَ الْخَلَنجِيِّ: سَمِعْتُ بَعْضَ الْمَشَايِخِ يَقُولُ: قَالَ مَالِكٌ: عَرَضْتُ كِتَابِي هَذَا عَلَى سَبْعِينَ فِقْهًا مِنْ فُقَهَاءِ الْمَدِينَةِ فَكُلُّهُمْ وَاطَّأَنِي عَلَيْهِ فَسَمَّيْتُهُ الْمَوْطَأَ.

قَالَ ابْنُ فِهْرٍ: لَمْ يَسْبِقْ مَالِكًا أَحَدٌ إِلَى هَذِهِ التَّسْمِيَةِ، فَإِنَّ مَنْ أَلْفَ فِي زَمَانِهِ بَعْضُهُمْ سَمَّى بِالْجَامِعِ، وَبَعْضُهُمْ سَمَّى بِالْمُصَنَّفِ، وَبَعْضُهُمْ بِالْمَوْلَفِ، وَلَفْظَةُ الْمَوْطَأِ بِمَعْنَى الْمَهْدِ الْمُنْفَعِ¹⁰.

المبحث الثاني

المطلب الأول: السياق، والتعدد، والدلالة، والمبنى، والنص، مفهوميهم:

السياق في اللغة

وذهب ابن فارس إلى أن السين والواو والقاف أصل واحد ، وهو حدو الشيء ، يقال ساقه يسوقه سوقا ، والسوقة ما استيق من الدواب ، ويقال : سقت إلى امرأتى صداقها وأسقته ، والسوق مشتقة من هذا لما يساق إليها من كل شيء ، والجمع أسواق والساق للإنسان وغيره والجمع : سوق وإنما سميت بذلك ، لأن الماشى ينساق عليها¹¹.

وأما عن السياق في الاصطلاح

فهو معاني النصوص ودلالاتها لا تتضح إلا من خلال السياق الذي ترد فيه ، لأن النص " كائن حي يتشكل مع القراءة الواعية ، والتحليل الهادف الذي يحدد مكونات النص ، بل وجودها"¹².

تعدد: تعدّد يتعدّد، تعدّداً، فهو مُتعدّد، تعدّدت المشكلات: زادت، كثرت، وصارت أكثر من واحدة "تعدّد الألوان/ الرّوجات- جهاز متعدّد الاستخدام- تعدّدت وسائل النّقل في عصرنا"

متعدّد الأغراض: يُستفاد منه في عدّة أشياء. تعدّدت العناصر: صارت ذات عددٍ (بعد أن كانت واحداً).

دلالة: دلالة الكلمة معناها ويقال: " دلّه على الطّريق يدُلّه دلالة ودلالة ودلولة، والفَتْحُ أعلى؛ وأنشد أبو عبيد:

إِنِّي امرؤٌ بالطَّرْقِ دُو دُلالات

والدَّلِيل والدِّلِيلِي: الَّذِي يَدُلُّكَ؛ قَالَ:

شَدُّوا المَطِيَّ عَلَى دَلِيلٍ دَائِبٍ، ... مِنْ أَهْلِ كَاظِمَةٍ، بِسَيْفِ الأَبْحَرِ

قَالَ بَعْضُهُمْ: مَعْنَاهُ بِدَلِيلٍ؛ قَالَ ابْنُ جَنِّي: وَيَكُونُ عَلَى حَدْفِ الْمُضَافِ أَيْ شَدُّوا المَطِيَّ عَلَى دَلَالَةٍ دَلِيلٍ فَحَدَفَ الْمُضَافَ وَقَوِيَ حَدْفُهُ هُنَا لِأَن لَفْظَ الدَّلِيلِ يَدُلُّ عَلَى الدَّلَالَةِ، وَهُوَ كَقَوْلِكَ سِرَّ عَلَى اسْمِ اللَّهِ، وَعَلَى هَذِهِ حَالٌ مِنَ الضَّمِيرِ فِي سِرَّ وَشَدُّوا وَلَيْسَتْ مُوصُولَةٌ لِهَذَيْنِ الْفِعْلَيْنِ لِكِنَّهَا مُتَعَلِّقَةٌ بِفِعْلِ مُحَذُوفٍ كَأَنَّهُ قَالَ: شَدُّوا المَطِيَّ مُعْتَمِدِينَ عَلَى دَلِيلٍ دَائِبٍ، فَفِي الظَّرْفِ دَلِيلٌ لِتَعَلُّقِهِ بِالمُحَذُوفِ الَّذِي هُوَ مُعْتَمِدِينَ، وَالْجَمْعُ أدْلَةٌ وأدلاء، وَالْإِسْمُ الدَّلَالَةُ والدَّلَالَةُ، بِالكَسْرِ والفَتْحِ، والدُّلُولَةُ والدِّلِيلِي. قَالَ سَيِّبَوْنِي: والدِّلِيلِي عِلْمُهُ بِالدَّلَالَةِ وَرُسُوحُهُ فِيهَا¹³.

المبنى: مبنى الكلمة هو شكلها الصرفي فاسم الفاعل مثلا مبنى يختلف عن مئى اسم المفعول ويختلف كل منهما عن صيغة المبالغة وهذه المباني كلها تختلف عن الفعل بصيغته المختلفة وهكذا.

النص: للنص تعريفات أكثر من أن تحصى في مثل هذا المقام ويمكن من باب الإجمال الذي لا يغني أن التفصيل لبيان معنى النص أن أشير إلى معنى النص الذي ذكره الدكتور محمد حماسة عبد اللطيف، رحمه الله، حين قال: " أن النص لا يصبح نصا إلا إذا كان رسالة لغوية تشغل حيزا معينا، فيها جديلة محكمة مضمفورة من المفردات والبنية النحوية، وهذه الجديلة المضمفورة تؤلف سياقاً خاصاً بالنص نفسه ينبثق في المرسلات اللغوية كلها"¹⁴.

المطلب الثاني: أنواع السياق

الأول: السياق اللغوي نفسه (verbal context) : الذى لا ينظر إلى الكلمات كوحدات منعزلة ، فالكلمة يتحدد معناها بعلاقاتها مع الكلمات الأخرى في السلسلة الكلامية .

وهذا السياق وهو يعنى علاقة العنصر اللغوى أو الوحدة اللغوية بالعناصر اللغوية المجاورة ، ويدخل تحته القرائن اللغوية ، ففى قوله تعالى : (أتى أمر الله فل تستعجلوه)¹⁵ يدل الفعل (أتى) بصيغته الصرفية على المضى إلا أن ارتباطه بجملة (فلا تستعجلوه) يصرفه من دلالة المضى إلى دلالة المستقبل¹⁷.

الثانى : سياق الموقف (context of situation) أو سياق الحال عند فيرث ، وهو نوع من التجريد من البيئة أو الوسط الذى يقع فيه الكلام ، وسياق الحال يشمل أنواع النشاط اللغوى جميعا كلاما وكتابة . غير أن بلو مفليد السلوكى حد سياق الحال بظواهر يمكن تقريرها فى إطار من الأحداث العملية وهو عنده ماضى ، ولهذا نجده يتجاهل حقائق لها شأن بالكلام .

المبحث الثالث : السياق وتعدد دلالة مبنى الكلمة فى النص

المطلب الأول : السياق وتعدد دلالة حروف المعانى

دلالة (حتى) بين الابتداء والعطف والجبر.

قال طاووس: وسمعت عبد الله بن عمر -رضي الله تعالى عنهما- يقول: قال رسول الله -صلى الله عليه وسلم-: ("كُلُّ شَيْءٍ بِقَدَرٍ حَتَّى الْعَجْزُ وَالْكَيْسُ" أو "الْكَيْسُ وَالْعَجْزُ")¹⁸.

الشاهد فى قوله ﷺ (حتى العجز والكيس).

والسؤال ما دلالة حتى التى يثي بها السياق فى الحديث الآتى الذى رواه الإمام مالك؟

الحديث : حدثني يحيى عن مالك عن زياد بن سعد عن عمرو بن مسلم، عن طاووس اليماني، أنه قال: أَدْرَكْتُ نَاسًا مِنْ أَصْحَابِ رَسُولِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، يَقُولُونَ: كُلُّ شَيْءٍ بِقَدَرٍ، وَسَمِعْتُ عَبْدَ اللَّهِ بْنَ عُمَرَ، يَقُولُ: قَالَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ: كُلُّ شَيْءٍ بِقَدَرٍ حَتَّى الْعَجْزُ وَالْكَيْسُ أَوْ الْكَيْسُ وَالْعَجْزُ¹⁹.

قال الوقشى : قوله صلى الله عليه وسلم (حتى العجز والكيس) ، يجوز رفع العجز والكيس عطفًا على (كل) ، ويجوز أيضا خفضهما على الغاية²⁰.

فجاء تعليقه على ذلك الحديث (كُلُّ شَيْءٍ بِقَدَرٍ حَتَّى الْعَجْزِ وَالْكَيْسِ أَوْ الْكَيْسِ وَالْعَجْزِ) وهو ما ثبت فى الصحيح من رواية يحيى الليث ، مجوزًا رَفَعَ الْعَجْزِ وَالْكَيْسِ عَطْفًا عَلَى "كُلِّ"، وَجَوُزُ خَفْضُهُمَا عَلَى الْغَايَةِ²¹.

وكان الزرقاني وافق الوقشي حينما ذكر قول القاضي عياض: رَوَيْنَاهُ بِالْخَفْضِ عَطْفًا عَلَى شَيْءٍ وَالرَّفْعِ عَطْفًا عَلَى " كُلُّ " وَقَدْ تَكُونُ حَتَّى جَارَةً وَهُوَ أَحَدُ مَعَانِيهَا²²، وقال الكندهلوي: " وزاد التوربشي في المحلّي: الجر أكثر، ورجح الطيبي أن (حتى) حرف جر بمعنى: إلى، نحو قوله تعالى (سَلَامٌ هِيَ حَتَّى مَطَلَعِ الْفَجْرِ) [القدر: ٥]، لأن المعنى يقتضى الغاية، إذ المراد أن أفعال العباد واكتسابهم كلها بتقدير خالقهم.

وفي الحقيقة أن (حتى) حرف، وله أربعة أقسام: يكون حرف جر بمعنى: (إلى)، نحو قوله تعالى (سَلَامٌ هِيَ حَتَّى مَطَلَعِ الْفَجْرِ) [القدر: ٥]، وقوله تعالى (ثُمَّ بَدَأَ لَهُمْ مِنْ بَعْدِ مَا رَأَوُا الْآيَاتِ لَيْسَ جُنتُهُ حَتَّى جِئِنِ) [يوسف: ٣٥]، أى إلى طلوع الفجر، وإلى حين²³، ويكون حرفاً من حروف العطف بمعنى الواو، نحو قولهم: مات الناس حتى الأنبياء، وقدم الججاج حتى المشاء، ومنه قول الشاعر:

ألقى الصحيفة كي يخفف رحله والزاد حتى نعله ألقاها²⁴

والشاهد فيه استعمال (حتى) في معنى الواو العطف.

لأن المعنى: ألقى ما يثقله حتى نعله. ولا يكون إلا واحداً من جمع، نحو: أكلت السمكة حتى رأسها. فلو قلت ضربت الرجلين حتى أفضلهما لم يجزم لأنه ليس جزءاً من أجزاء المعطوف، ولا واحداً من جمع²⁵، ويمكن للباحث أن يضرب لذلك مثالا قولهم: أكلت السمكة حتى رأسها، لأن الرأس جزء من السمكة. ويصح أن يكون حرف ابتداء يستأنف بعدها الكلام فيرفع ما بعدها، وليس معنى ذلك أنه يجب أن يليها المبتدأ والخبر، بل معناه أن يكون صالحاً لذلك، كقول جرير يهجو الأخطل²⁶:

وما زالت القتلى تمور دماؤها ... بدجلة حتى ماء دجلة أشكل

حيث قد وردت في هذا البيت ابتدائية، وتدخل على جملة مضمونها غاية لشيء قبلها فتشارك الجارة والعاطفة في معنى الغاية. وانطلاقاً من ذلك الأمر، هناك عدة أوجه للكلمة (حتى) استعمالاً، منها:

الأول: جواز الجر والعطف، لذلك، توضع (إلى) مكان (حتى) العاطفة شريطة أن يستقيم المعنى، ومن ذلك ما ورد في الحديث النبوي الشريف قوله صلى الله عليه وسلم " وَالَّذِي نَفْسِي بِيَدِهِ،

ليختصمن كل شيء يَوْمَ الْقِيَامَةِ، حَتَّى الشَّاتَيْنِ فِيمَا انتطحا "²⁷ بالجر على تقدير (إلى)، وبالرفع عطفاً على (كل)²⁸.

الثاني : جواز الجر والابتداء ، كما في قوله صلى الله عليه وسلم في حديث المواقيت : " ومن كان دُونَ ذلك ، فمنْ حيثْ أنشأ ، حتى أهل مكة من مكة " ²⁹ ، فقال ابن حجر : " قوله : حَتَّى أَهْلَ مَكَّةَ يَجُوزُ فِيهِ الرَّفْعُ وَالْكَسْرُ ³⁰ . والجر على أن (حتى) حرف جر بمعنى (إلى) ، والرفع على أنه مبتدأ وخبره محذوف تقديره : حتى أهل مكة يهلون من مكة ³¹ .

الثالث : جواز الابتداء أو العطف ، على سبيل المثال : في قول عمر بن الخطاب لسعد بن أبي وقاص : " لقد شكوك في كل شيء حتى الصلاة " بالرفع على الابتداء ، لأن (حتى) تكون غاية لما قبلها بزيادة كما في قولهم : مات الناس حتى الأنبياء ، والمعنى : حتى الصلاة شكوك فيها ، وفي حال الجر قد تكون (حتى) عاطفة لا غير ، ولا تصلح جارة ، لانتفاء صلاحية (إلى) موضعها ³² .

ويتضح للباحث أن جواز الاستعمالات الثلاثية هي العاطفة ، الجارة ، والابتدائية كما ورد في بيت مروان بن سعد النحوي السالف السابق بثلاث لغات في (نعله) : الرفع و النصب والجر ³³ ، وبيانها على النحو التالي :
الرفع : على أن (حتى) ابتدائية ، و (نعله) مبتدأ ، وجملة (ألقاها) في محل رفع خبر وضمير (ألقاها) للنعل ، بخلاف الجر والعطف فالضمير إما للنعل أو للصحيفة .

والجر : على أن (حتى) جارة و (نعله) مجرور بها ، وجملة (ألقاها) توكيد ل (ألقى) الأولى .
النصب : على أن (حتى) عاطفة ، عطفت (نعله) على (الزاد) ، ومنه في حديث السائب بن خالد : " مَا مِنْ شَيْءٍ يُصِيبُ الْمُؤْمِنَ حَتَّى الشَّوْكَةُ تَصِيبُهُ إِلَّا كَتَبَ اللَّهُ لَهُ بِهَا حَسَنَةً أَوْ حُطَّتْ عَنْهُ بِهَا خَطِيئَةٌ " ³⁴ فجاز فيه الحركات الثلاثة ³⁵ .
ولذلك ، كان الباحث مطمئناً إلى أنه حيث جاز فيه العطف يجوز فيه الجر ، فالجار أحسن ، لأن الجارة أعم في الغاية ، فالذي بعد العاطفة يكون الانتهاء به . والذي بعد الجارة قد يكون الانتهاء به ، وقد يكون الانتهاء عنده ، وأن العاطفة يلزم أن يكون ما بعدها غاية لما قبلها ، أما الجارة فقد يدخل وقد لا يدخل ³⁶ .

والخلاصة ، أن قوله صلى الله عليه وسلم " (العجز والكيس) يدخل في حكم ما قبل (حتى) يعني (قدر الله تعالى) ومشارك أيضاً في إعرابه ، وبالرفع على (كل) ، وبالجر عطفًا على (شيء) .
والراجع على حد علم الباحث ، أن العطف على الابتدائية والجارة التي بمعنى

(إلى) لأن العطف يحقق الغاية بأن ما بعدها جزء لما قبلها ، من جهة ، ومن جهة أخرى دخول ما بعدها في حكم قبلها ، وأخيرا ، أن هذه دلالة موافقة إلى الإرشاد المقصود من الحديث الشريف³⁷. والله تعالى أعلم.

المطلب الثاني: السياق وتعدد دلالة الاسم في موطأ الإمام مالك:

الحديث: قَالَ يَحْيَى: قَالَ مَالِكُ: "إِنَّ أَحْسَنَ مَا سَمِعَ فِي عُمَالِ الرَّقِيقِ فِي الْمُسَاقَاةِ. يَشْتَرِطُهُمُ الْمُسَاقَى عَلَى صَاحِبِ الْأَصْلِ: إِنَّهُ لَا بَأْسَ بِذَلِكَ. لِأَنَّهُمْ عُمَالُ الْمَالِ. فَهُمْ بِمَنْزِلَةِ الْمَالِ. لَا مَنَفْعَةَ فِيهِمْ لِلدَّخْلِ إِلَّا أَنَّهُ تَخَفُّ عَنْهُمْ الْمُتَوَنُّةُ، وَإِنْ لَمْ يَكُونُوا فِي الْمَالِ اشْتَدَّتْ مُتَوَنُّتُهُ، وَإِنَّمَا ذَلِكَ بِمَنْزِلَةِ الْمُسَاقَاةِ فِي الْعَيْنِ وَالنَّضْحِ. وَلَنْ تَجِدَ أَحَدًا يُسَاقَى فِي أَرْضَيْنِ سَوَاءٍ فِي الْأَصْلِ وَالْمَنَفْعَةِ. إِحْدَاهُمَا بَعَيْنٍ وَآثِنَةٍ غَزِيرَةٍ. وَالْأُخْرَى بِنَضْحٍ عَلَى شَيْءٍ وَاحِدٍ، لِخَفَةِ [ص: ٧١] مُؤَنَةِ الْعَيْنِ. وَشِدَّةِ مُؤَنَةِ النَّضْحِ، قَالَ: وَعَلَى ذَلِكَ، الْأَمْرُ عِنْدَنَا"³⁸.

• الشاهد في قوله ﷺ (عُمَالِ الرَّقِيقِ). دلالة صيغة (عَمَلٍ ، عُمَالٍ) بين المصدر وجمع التكسير واسم الجمع.

(الأول: دلالة (عُمَالٍ))

فدلالة (عُمَالٍ) جمعا مكسرا جاءت لتكثير القيام بالفعل لا لتكثير العدد القائمين به ، لأنه يناسب ما ورد في فقه الإمام مالك وحديثه عن المساقاة والزراعة بوصفها حرفة تحتاج إلى جهد جهيد للقيام بأعبائها ، لذا واءم مجيء الجمع على هذا البناء الذي يراد به تكثير القيام بالفعل ، وإن تضمن كثرة القائمين من الرقيق والخدم والغلمان الذين تحتاجهم المساقاة. الثاني: دلالة (عَمَلٍ) اسما للجمع ، وهو يناسب بأقوال النحاة عن هذا البناء أنه بناء يعد من أكثرها دورانا على ألسنة ، وانتشارا في أبنية الاسم والفعل ، نظرا لخفته .

ويدل على أمر المساقاة والزراعة إلى أنه من خفة وحركة متكررين بشأن ما تنتجه الكروم والنخيل من محاصيل.

الثالث: أما دلالة (عَمَلٍ) مصدرا ، قد وضع موضع الاسم ليجعل القائمون في حقل المساقاة كأنهم الفعل نفسه ، والمراد به المبالغة في الحديث لا عدد القائمين به.

قال الوقشي: قوله "عُمَالِ الرَّقِيقِ" كذا رواية عبيد الله ، وتوهم قوم أن ذلك غلط ، وليس عندي غلط ، فمجاوزه على وجهين :

أَحَدُهُمَا: أَنَّ يَكُونُ عَمَلٌ جَمْعٌ عَامِلٍ كَحَارِسٍ وَغَائِبٍ، وَهُوَ فِي الْحَقِيقَةِ اسْمٌ لِلْجَمْعِ.

وَالثَّانِي: أَنَّ يَكُونُ مِمَّا وَضِعَ الْمَصْدَرُ فِيهِ مَوْضِعَ الْأَسْمِ، وَالْمَصْدَرُ إِذَا وَضِعَ مَوْضِعَ الْأَسْمِ كَانَ لِلْوَاحِدِ وَالْأَثْنَيْنِ وَالْجَمْعِ وَالْمُذَكَّرِ بِلَفْظٍ وَاحِدٍ، قَالَ تَعَالَى (٢): {هُؤُلَاءِ ضَيْفِي} أَي: أَضْيَافِي، وَقَالَ زُهَيْرٌ: (٣) * فَهُمْ رَضَى وَهُمْ عَدْلٌ³⁹.

فصيغة (عَمَلٍ) من رواية عبيد الله وأما (عُمَالٍ) فهي رواية يحيى .

ويناقش الباحث هنا أقوال النحاة في صيغة (فَعَلٍ) جمع (فاعل) اسم للجمع حينما علّق الوقشي نحو قول الإمام مالك – رحمه الله تعالى: "شركاءه غُيِّبٌ ، أو (غَيْبٌ)" وكذلك ، في تناول قضية وضع المصدر موضع الاسم ، مما يغني عن إعادته

وانطلاقاً من ذلك ، يريد الباحث أن يعرض أقوال النحاة في بحث صيغة عَمَّال التي على وزن (فُعَّال) لأنه لم يعرض من قبل .

يتضح لنا أن الرضى كان قد ذكر في شرح الشافية أن الغالب في فاعل (الوصف) أن يجمع على (فُعِّل) ، وبعد ذلك ، فذكر أنه يكسّر أيضا كثيرا على (فُعَّال) كزَوَّار و عَيَّاب ، لأنهما أصل في جمع (فاعل) الوصف ، أى فُعَّلا و فُعَّالا⁴⁰، ويطرد جمعا لوصف صحيح اللام على لمذكر فاعل كصائم وصوام⁴¹.

واضحا ، أن هذا الجمع قد يدل على كثرة القيام بالفعل كالزراع والحفاظ والقراء والطلاب وغير ذلك ، لأن فيه دلالة على الحركة والحدث . وتقول : قدم الحفاظ والقراء لمن كان قيامهم بالفعل واتصافهم به كثيرا ، فهو إذن لتكثير القيام بالفعل لا لتكثير عدد القائمين به⁴².

وقال الدكتور فاضل صالح السامرائي واضحا في كتابه بأن ضرب مثالا بقوله : " فأنت تقول للألف إذا قرءوا سورة واحدة هم قارئون ، وتقول للثلاثة إذا كان قيامهم بالأمر كثيرا واتصافهم به كبيرا : هم قراء " ⁴³ ولذلك الأمر ، فإن الباحث قد رأى أن لهذه المسألة ثلاث دلالات :

الأول : دلالة (عَمَّال)

"فدلالة (عَمَّال) جمعا مكسرا جاءت لتكثير القيام بالفعل لا لتكثير العدد القائمين به ، لأنه يناسب ما ورد في فقه الإمام مالك وحديثه عن المساقاة والزراعة بوصفها حرفة تحتاج إلى جهد جهيد للقيام بأعبائها ، لذا واءم مجيء الجمع على هذا البناء الذي يراد به تكثير القيام بالفعل ، وإن تضمن كثرة القائمين من الرقيق والخدم والغلمان الذين تحتاجهم المساقاة. الثانى : دلالة (عَمَل) اسما للجمع ، وهو يناسب بأقوال النحاة عن هذا البناء أنه بناء يعد من أكثرها دورانا على ألسنة ، وانتشارا في أبنية الاسم والفعل ، نظرا لخفته .

ويدل على أمر المساقاة والزراعة إلى أنه من خفة وحركة متكررين بشأن ما تنتجه الكروم والنخيل من محاصيل. الثالث : أما دلالة (عَمَل) مصدرا ، قد وضع موضع الاسم ليجعل القائمون في حقل المساقاة كأنهم الفعل نفسه ، والمراد به المبالغة في الحديث لا عدد القائمين به. وعلى حد علمي فأن الدلالات ثلاثها متقاربة ، وتصب في دائرة دلالية تكاد تكون واحدة⁴⁴.

المطلب الثالث : السياق وتعدد دلالة الفعل في موطأ الإمام مالك:

السياق وتعدد دلالة الفعل (ظهر):

قَالَ عُرْوَةُ: وَلَقَدْ حَدَّثَنِي عَائِشَةُ زَوْجُ النَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ أَنَّ النَّبِيَّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ كَانَ يُصَلِّي الْعَصْرَ وَالشَّمْسُ فِي حُجْرَتِهَا قَبْلَ أَنْ تَظْهَرَ.⁴⁵

هل يكون ظهر بمعنى ارتفع أي يكون بمعنى الظهور والصعود أو يكون بمعنى زال وهل يترتب على ذلك اختلاف في المعنى هل يفيد أحدهما تعجيل صلاة العصر ويقيد الآخر تأخيرها أم أن لا اختلاف والمعنى واحد؟

هذا إذا أسند الظهور إلى مسند واحد فماذا لو أسند الظهور إلى أكثر من مسند؟ يقول صاحب شرح الزرقاني: (وَالشَّمْسُ فِي حُجْرَتِهَا) بِضَمِّ الْحَاءِ الْمُهْمَلَةِ وَسُكُونِ الْجِيمِ؛ أَي: بَيْتِهَا، قَالَ ابْنُ سِيدَةَ: سُمِّيَتْ بِذَلِكَ لِتَنَعُّيْهَا الْمَالَ؛ أَي: وَوُصُولِ الْأَعْيَارِ مِنَ الرِّجَالِ، وَلِلْبَيْتَيْنِ: فِي قَعْرِ حُجْرَتِهَا وَفِيهِ نَوْعُ التِّفَافِ، وَفِي رِوَايَةٍ: فِي حُجْرَتِي عَلَى الْأَصْلِ. (قَبْلَ أَنْ تَظْهَرَ) أَي: تَرْتَفِعَ، قَالَ فِي الْمُوَعَّبِ: ظَهَرَ فَلَانَ السَّطْحَ إِذَا عَلَا، وَمِنْهُ: {فَمَا اسْطَاعُوا أَنْ يَظْهَرُوهُ} [الكهف: ٩٧] (سُورَةُ الْكَهْفِ: آيَةُ ٩٧) أَي: يَعْلُوهُ.

وَقَالَ الْخَطَّابِيُّ: مَعْنَى الظُّهُورِ الصُّعُودُ وَمِنْهُ: {وَمَعَارِجَ عَلَمَهَا يَظْهَرُونَ} [الزخرف: ٣٣] (سُورَةُ الزُّخْرَفِ: آيَةُ ٣٣) وَقَالَ عِيَّاضٌ: قِيلَ: الْمُرَادُ تَظْهَرُ عَلَى الْجُدْرِ. وَقِيلَ: تَرْتَفِعُ كُلُّهَا عَنِ الْحُجْرَةِ. وَقِيلَ: تَظْهَرُ بِمَعْنَى تَزُولُ عَنْهَا كَمَا قَالَ: وَتِلْكَ شَكَاةُ ظَاهِرٍ عَنْكَ عَارُهَا، انْتَهَى.

وَفِي رِوَايَةِ ابْنِ عُيَيْنَةَ، عَنِ ابْنِ شِهَابٍ فِي الصَّحِيحَيْنِ: "كَانَ يُصَلِّي صَلَاةَ الْعَصْرِ وَالشَّمْسُ طَالِعَةً فِي حُجْرَتِي لَمْ يَظْهَرَ الْفَيْءُ بَعْدَ " فَجَعَلَ الظُّهُورَ لِلْفَيْءِ.

وَفِي رِوَايَةِ مَالِكٍ: " جَعَلَهُ لِلشَّمْسِ " وَجَمَعَ الْحَافِظُ بِأَنَّ كُلًّا مِنَ الظُّهُورِ غَيْرُ الْآخِرِ، فَظُهُورُ الشَّمْسِ خُرُوجُهَا مِنَ الْحُجْرَةِ، وَظُهُورُ الْفَيْءِ انْبِسَاطُهُ فِي الْحُجْرَةِ فِي الْمَوْضِعِ الَّذِي كَانَتِ الشَّمْسُ فِيهِ بَعْدَ خُرُوجِهِ..⁴⁶

إِذْنِ الْمُسْتَفَادِ مِنْ هَذَا الْحَدِيثِ سِوَاءَ أَكَانَ ظَهَرَ بِمَعْنَى الظُّهُورِ وَالصُّعُودِ وَالْإِرْتِفَاعِ أَمْ كَانَ بِمَعْنَى الزَّوَالِ وَسِوَاءَ أَسْنَدِ الظُّهُورِ إِلَى الشَّمْسِ أَمْ أَسْنَدِ إِلَى الْفَيْءِ، أَقُولُ إِنَّ الْمَعْنَى الْمُرَادَ وَاللَّهُ أَعْلَمُ هُوَ تَعْجِيلُ صَلَاةِ الْعَصْرِ فِي أَوَّلِ وَقْتِهَا وَهَذَا مَا فَهِمْتُهُ عَائِشَةُ وَكَذَا عُرْوَةُ الرَّائِي عَنْهَا رَضِيَ اللَّهُ عَنْهُمَا .

هذا وقد ذهب غيرهما إلى غير هذا المعنى أقصد التعجيل معتمدا على افتراضات عقلية لا مفردات الحديث فذهب إلى أن المراد التأخير وليس التعجيل فقال:

" لَا دَلَالَهَ فِيهِ عَلَى التَّعْجِيلِ لِإِحْتِمَالِ أَنَّ الْحُجْرَةَ كَانَتْ قَصِيرَةً الْجِدَارِ فَلَمْ تَكُنْ تَحْتَجِبُ عَنْهَا إِلَّا بِقُرْبِ غُرُوبِهَا فَيَدُلُّ عَلَى التَّأْخِيرِ لَا عَلَى التَّعْجِيلِ، وَتَعَقَّبَ بِأَنَّ هَذَا الْإِحْتِمَالُ إِنَّمَا يُتَصَوَّرُ مَعَ اتِّسَاعِ الْحُجْرَةِ، وَقَدْ عُرِفَ بِالِاسْتِفَاضَةِ وَالْمُشَاهَدَةِ أَنَّ حُجْرَةَ أَزْوَاجِهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ لَمْ تَكُنْ مُتَّسِعَةً⁴⁷.

الخاتمة وأهم النتائج

في ختام هذا البحث الذي تناول دور السياق اللغوي والحالي في بيان تعدد دلالة مبنى الكلمة في النص، خاصة في موطأ الإمام مالك، تبين أن السياق يعد مفتاحاً رئيسياً لفهم المعنى وتحديد دلالات الكلمات وفق الاستخدام والسياق الوارد. يتبين لنا أن المبنى الصرفي للكلمات - سواء الحرف، الاسم، أو الفعل - قد يكتسب دلالات متعددة بناءً على القرائن السياقية المصاحبة له.

إن دراسة السياق اللغوي والحالي لم تقتصر على الجانب النظري فحسب، بل عززت بأمثلة تطبيقية من موطأ الإمام مالك، مما أظهر عمق فكر الإمام مالك - رحمه الله - في التعامل مع النصوص ومعاني الألفاظ في سياقاتها المختلفة.

١ - أهمية السياق اللغوي والحالي:

السياق اللغوي يؤثر بشكل مباشر على فهم دلالة الكلمات داخل النصوص. السياق الحالي (المقامي) يوفر بُعداً إضافياً من خلال الظروف المحيطة بالنص، مثل المتكلم، المخاطب، والموقف الذي قيلت فيه العبارة.

٢ - تعدد دلالة مبنى الكلمة:

يتضح أن المبنى الصرفي للكلمة (حرف، اسم، أو فعل) قد يحمل معاني متعددة. على سبيل المثال: دلالة (حتى) بين الابتداء والعطف والجر، ودلالة صيغة (عَمَلٍ، عَمَّالٍ) بين المصدر وجمع التكسير واسم الجمع.

١ - دور موطأ الإمام مالك:

كتاب الموطأ لم يكن مجرد نص فقهي، بل وثيقة لغوية غنية تُظهر عمق السياق وتأثيره على الدلالة. الإمام مالك قدّم نموذجاً عملياً في كيفية التعامل مع النصوص وفهم المعاني من خلال السياق. الإمام مالك وظّف السياق بشكل دقيق لتوضيح الأحكام الفقهية ومعاني النصوص الشرعية.

٢ - الدلالة القرآنية والشواهد التطبيقية:

أظهر البحث أن القرينة السياقية - في النصوص القرآنية والنصوص المروية في الموطأ - تُعد أساساً في إزالة الالتباس وتوضيح المعنى المقصود.

٣ - القيمة العلمية واللغوية:

البحث يُعد إضافة معرفية لعلوم اللغويات، حيث يعزز من أهمية دراسة السياق في تحليل النصوص الدينية واللغوية بشكل أعمق.

التوصيات

١ - ضرورة الاهتمام بدراسة السياق في النصوص التراثية؛ لأن له دوراً كبيراً في فهم الألفاظ والمعاني بدقة.

٢ -حث الباحثين على دراسة تطبيقات السياق في كتب الحديث والفقه؛ لا سيما الكتب المبكرة مثل موطأ الإمام مالك.

٣ - توجيه الدراسات اللغوية المستقبلية نحو تحقيق التوازن بين السياق اللغوي والسياق المقامي.

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²¹ المصدر السابق، ج 2، ص ٣١١.

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²³ ينظر: أبو محمد بدر الدين حسن بن قاسم بن عبد الله بن علي المرادي المصري المالكي (المتوفى: ٧٤٩ هـ)، الكتاب: الجنى الداني في حروف المعاني، المحقق: د. فخر الدين قباوة - الأستاذ محمد نديم فاضل، الناشر: دار الكتب العلمية، بيروت - لبنان، الطبعة: الأولى، ١٤١٣ هـ - ١٩٩٢ م، ص ٥٤٢.

²⁴ هو مروان بن سعيد النحوى ينتهى نسبه إلى المهلب بن أبي صفرة، أحد أصحاب الخليل المتقدمين المبرزين في النحو، وقد جاء تعليق سبويه عن البيت أنه يحسن الجر في (نعله)، وهو ما ثبت في نسخته عبد السلام هارون، وجوز الرفع. انظر: الكتاب 1/97:، لكن ابن أم قاسم المرادى أثبت رواية (نعله) بالنصب، عطفًا على الصحيفة، لأن المعنى: ألقى ما يثقله حتى نعله، الجنى الداني، ص: ٥٤٧.

²⁵ أبو محمد بدر الدين حسن بن قاسم بن عبد الله بن علي المرادي المصري المالكي (المتوفى: ٧٤٩ هـ)، الكتاب: الجنى الداني في حروف المعاني، الطبعة: الأولى، ١٤١٣ هـ - ١٩٩٢ م، ص ٥٤٧.

²⁶ الكتاب: ديوان جرير بشرح محمد بن حبيب، المحقق: د. نعمان محمد أمين طه، الناشر: دار المعارف، القاهرة - مصر، عدد الأجزاء: ٣، الطبعة: الثالثة، ج ١، ص ١٤٣. وفي: محمد بن سلام (بالتشديد) بن عبيد الله الجمعي بالولاء، أبو عبد الله (ت ٢٣٢ هـ) طبقات فحول الشعراء، المحقق: محمود محمد شاكر، دار المدني - جدة، ٢٠٤٨، تمج دماءها.

²⁷ شمس الدين، أبو العون محمد بن أحمد بن سالم السفاريني الحنبلي (المتوفى: ١١٨٨ هـ)، الكتاب: لوامع الأنوار البهية وسواطع الأسرار الأثرية لشرح الدرة المضية في عقد الفرقة المرضية، الناشر: مؤسسة الخافقين ومكتبتها - دمشق، الطبعة: الثانية 1402 هـ - ١٩٨٢ م، عدد الأجزاء: ٢، ص ١٧٣.

²⁸ ينظر: أبو البقاء عبد الله بن الحسين بن عبد الله العكبري البغدادي محب الدين (المتوفى: ٦١٦ هـ)، الكتاب: إعراب ما يشكل من ألفاظ الحديث النبوي، المحقق: حقه وخروج أحاديثه وعلق عليه د. عبد الحميد هندواي، الناشر: مؤسسة المختار للنشر والتوزيع - مصر/ القاهرة، الطبعة: الأولى، ١٤٢٠ هـ - 1999 م، عدد الأجزاء: ١، ج ١، ص ١٤٦.

²⁹ أبو سليمان حمد بن محمد الخطابي (ت ٣٨٨ هـ)، الكتاب: أعلام الحديث (شرح صحيح البخاري)، المحقق: د. محمد بن سعد بن عبد الرحمن آل سعود، الناشر: جامعة أم القرى (مركز البحوث العلمية وإحياء التراث الإسلامي)، عدد الأجزاء: ٢٠ جزء (في ١٠ مجلدات)، الطبعة: الأولى، 1409 هـ - ١٩٨٨ م، ج ٢، ص 834.

³⁰ أحمد بن علي بن حجر أبو الفضل العسقلاني الشافعي، الكتاب: فتح الباري شرح صحيح البخاري، الناشر: دار المعرفة - بيروت، ١٣٧٩، عدد الأجزاء: ١٣، ج ٣، ص ٣٨٦.

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³² المصدر السابق ، ص ٤٠٧ .

³³ ينظر : عبد الله كمال أبو العلا أحمد ، الاختلاف الصيغي والتركيب في موطأ مالك دراسة دلالية من خلال كتاب التعليق على الموطأ للوقشي الأندلسي في تفسير لغاته وغوامض إعرابه ومعانيه ، رسالة ماجستير ، جامعة القاهرة ، كلية دار العلوم ، قسم النحو والصرف والعروض ، ١٤٣٤ هـ ، ٢٠١٣ م ، ص ٢٧٤ .

³⁴ صهيب عبد الجبار ، الكتاب : المسند الموضوعي الجامع للكتب العشرة ، عام النشر : ٢٠١٣ م ، ج ٦ ، ص ٢٠ .

³⁵ أبو البقاء عبد الله بن الحسين بن عبد الله العكبري البغدادي محب الدين (المتوفى : ٦١٦ هـ) ، الكتاب : إعراب ما يشكل من ألفاظ الحديث النبوي ، المحقق : حققه وخرج أحاديثه وعلق عليه د . عبد الحميد هندawi ، الناشر : مؤسسة المختار للنشر والتوزيع - مصر / القاهرة ، الطبعة : الأولى ، ١٤٢٠ هـ - ١٩٩٩ م ، ج ١ ، ص ٩٢ .

³⁶ أبو محمد بدر الدين حسن بن قاسم بن عبد الله بن علي المرادي المصري المالكي (المتوفى : ٧٤٩ هـ) ، الكتاب : الجنى الداني في حروف المعاني ، الناشر : دار الكتب العلمية ، بيروت – لبنان ، الطبعة : الأولى ، ١٤١٣ هـ - ١٩٩٢ م ، ص ٥٤٩ .

³⁷ عبد الله كمال أبو العلا أحمد ، الاختلاف الصيغي والتركيب في موطأ مالك دراسة دلالية من خلال كتاب التعليق على الموطأ للوقشي الأندلسي في تفسير لغاته وغوامض إعرابه ومعانيه ، رسالة ماجستير ، جامعة القاهرة ، كلية دار العلوم ، قسم النحو والصرف والعروض ، ١٤٣٤ هـ ، ٢٠١٣ م ، ص ٢٧٥ ، 276 .

³⁸ مالك بن أنس بن مالك بن عامر الأصبحي المدني (المتوفى : ١٧٩ هـ) ، صححه ورقمه وخرج أحاديثه وعلق عليه : محمد فؤاد عبد الباقي ، موطأ الإمام مالك ، الناشر : دار إحياء التراث العربي ، بيروت – لبنان ، عام النشر 1406 هـ - ١٩٨٥ م ، ج ٢ ص ٧٠٩ .

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⁴⁰ ينظر : محمد بن الحسن الرضي الإسترابادي ، نجم الدين (المتوفى : ٦٨٦ هـ) ، الكتاب : شرح شافية ابن الحاجب ، الناشر : دار الكتب العلمية بيروت – لبنان ، عام النشر : ١٣٩٥ هـ - ١٩٧٥ م ، ج ٢ ، ص 155-156 .

⁴¹ ينظر : عبد الرحمن بن أبي بكر ، جلال الدين السيوطي (المتوفى : ٩١١ هـ) ، الكتاب : همع الهوامع في شرح جمع الجوامع ،

⁴² ينظر : د. فاضل صالح السامرائي ، الكتاب : معاني الأبنية في العربية ، الناشر : دار عمار ، تاريخ الإصدار ١ يناير ٢٠١٧ م ، ج ١ ، ص ١٣٠ .

⁴³ ينظر : المصدر السابق نفسه .



⁴⁴ عبد الله كمال أبو العلا أحمد، الاختلاف الصيغي والتركيب في موطأ مالك دراسة دلالية من خلال كتاب التعليق على الموطأ للوقشي الأندلسي في تفسير لغاته وغوامض إعرابه ومعانيه، رسالة ماجستير، جامعة القاهرة، كلية دار العلوم، قسم النحو والصرف والعروض، 1434 هـ، ٢٠١٣ م ص ١٣٠، ١٣١.

⁴⁵ الزرقاني (محمد بن عبد الباقي بن يوسف المصري الأزهري، شرح الزرقاني على موطأ الإمام مالك، تحقيق: طه عبد الرؤوف سعد، مكتبة الثقافة الدينية – القاهرة - الطبعة: الأولى، 1424 هـ 2003 م، كتاب وقوت الصلاة، باب وقوت الصلاة، ص: ٧٦.

⁴⁶ الزرقاني (محمد بن عبد الباقي بن يوسف المصري الأزهري، شرح الزرقاني على موطأ الإمام مالك، كتاب وقوت الصلاة، باب وقوت الصلاة، ص: ٧٧.

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Transformation Of Artificial Intelligence Utilization In The Management Of Zakat Funds In Indonesia: A Review Of Ethics And Sharia Economic Law

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Abstract

Effective, transparent, and accountable management of zakat funds is one of the main factors in realizing the welfare of the people. Along with the development of technology, Artificial Intelligence (AI) began to be adopted in various sectors, including Islamic philanthropy, to improve the efficiency and optimization of zakat distribution. This research aims to analyze the use of AI in the management of zakat funds in Indonesia from the perspective of Islamic ethics and sharia economic law. The research method used is a literature study with a qualitative approach, which includes analysis of scientific literature, zakat regulations, and sharia legal principles. The results show that AI can improve transparency and accuracy in the identification of mustahik (zakat recipients), accelerate the process of fund collection and distribution, and reduce the potential for human error and inefficiency. However, the implementation of AI in zakat management also poses challenges, such as the need for compliance with sharia principles, data security, and ethical aspects in its use. From the perspective of sharia economic law, the use of AI must fulfill the principles of justice, transparency, trustworthiness, and the benefit of the people. Therefore, clear regulations and supervision from relevant authorities are needed to ensure that the application of AI in zakat remains in accordance with Islamic values. This study recommends that zakat institutions in Indonesia start adopting AI technology gradually by considering the ethical and legal aspects of sharia. In addition, synergy between scholars, academics, and technology practitioners is needed to develop AI systems that are in accordance with maqashid sharia. Thus, AI can be an innovative solution in improving the effectiveness and accountability of zakat fund management in Indonesia.

Keywords: Artificial Intelligence, Zakat, Sharia Economic Law, Islamic Ethics, Zakat Fund Management.

Introduction

Zakat is one of the main instruments in the Islamic economic system that has an important role in creating social welfare and economic equity (Baihaqi, 2024). As the third pillar of Islam, zakat is required for every Muslim who meets the requirements to spend some of their wealth to those who are entitled to receive it (mustahik) (Arif, 2024). In the context of Islamic economics, zakat functions as a wealth redistribution mechanism that aims to reduce social inequality and improve the lives of the underprivileged (Pida & Zein, 2025). With a good zakat system, economic balance can be maintained, so that economic inequality that often occurs in conventional economic systems can be minimized (Junaidi & Polindi, 2024).



In Indonesia, as the country with the largest Muslim population in the world, the potential for zakat is huge. Reports from the National Zakat Agency (BAZNAS) show that the potential of zakat in Indonesia reaches hundreds of trillions of rupiah each year. However, the realization of zakat collection and distribution is still far from that figure (Nasution, 2021). One of the causes is the zakat management system that still faces various challenges, both in terms of regulations, infrastructure, and public literacy regarding zakat obligations. There are still many people who do not understand the importance of zakat and how to distribute it properly. In addition, many zakat institutions have not implemented an optimal fund management system, so there are still inefficiencies in the distribution of funds to mustahik (Rian et al., 2023).

One of the main challenges in managing zakat funds in Indonesia is the lack of transparency and accountability in the process of collecting, managing, and distributing them (Sulistiyaningsih et al., 2024). Many muzakki (zakat payers) are reluctant to channel their zakat through official institutions due to concerns about the effectiveness and transparency in the distribution of these funds. On the other hand, identification of the right mustahik is also a significant problem, where there are often inaccuracies in the distribution of funds due to limited data and data collection systems that have not been well integrated. Therefore, innovation is needed in the zakat management system to be more effective, efficient, and reliable (Indranata, 2024).

Along with the development of technology, Artificial Intelligence (AI) is starting to be adopted in various sectors, including in the financial system and Islamic philanthropy. AI has great potential in improving the efficiency of zakat management, starting from the process of collecting funds, verifying mustahik data, to distributing funds that are more targeted. With smart algorithms, AI can analyze muzakki and mustahik data automatically, thus minimizing human errors in the fund distribution process. In addition, AI can also improve transparency and accountability of zakat management by providing a system that can be accessed by the public to monitor the flow of zakat funds in real-time (Musta'in et al., 2022). The application of AI in the management of zakat funds can be done through various technologies, such as machine learning, big data analytics, and blockchain. These technologies can be used to identify mustahik who are truly entitled to receive zakat based on their economic and social data. Thus, zakat distribution can be done more effectively and efficiently, and reduce the possibility of misappropriation of funds. In addition, AI can also help in optimizing the investment of zakat funds so that it can provide long-term benefits for zakat recipients. For example, AI can be used to analyze sharia-based investment opportunities that can generate optimal returns, so that zakat funds are not only used for consumption, but also for mustahik economic empowerment.

Although AI offers various benefits in the management of zakat, its implementation also raises various questions from the perspective of Islamic ethics and Islamic economic law. In Islam, zakat management must be based on the principles of justice, trustworthiness, transparency, and the benefit of the people. Therefore, the use of AI in zakat management must be studied in depth to ensure that this technology does not contradict sharia principles. One aspect that needs to be considered is how AI can ensure that the decisions taken in the zakat distribution



process remain in accordance with Islamic values and not only based on data analysis alone (Lisnawati, Muzalipah, et al., 2024).

From the perspective of Islamic economic law, the use of AI in the management of zakat must meet the principles of maqashid sharia, namely protecting religion (hifz al-din), protecting the soul (hifz al-nafs), protecting the mind (hifz al-aql), protecting offspring (hifz al-nasl), and protecting property (hifz al-mal) (Erianto et al., 2024). In the context of zakat, AI must be used to ensure that the assets managed can provide maximum benefits for mustahik without violating sharia provisions. In addition, the aspect of public trust in AI systems is also something that needs to be considered, given the many concerns regarding algorithm bias, data privacy, and potential misuse of technology (Ali & Jadidah, 2024).

By considering these various aspects, this research aims to analyze the use of AI in the management of zakat funds in Indonesia from the perspective of Islamic ethics and sharia economic law. This research will examine how AI can improve the effectiveness and transparency in zakat management, as well as examine its compliance with sharia principles. In addition, this research will also discuss the challenges and opportunities in the application of AI in the zakat system, and provide recommendations for zakat management institutions in adopting this technology in a sharia-compliant manner.

Through this study, it is hoped that innovative solutions can be found in improving the effectiveness of zakat management in Indonesia while maintaining Islamic values. The utilization of AI in the zakat system can not only increase efficiency in fund management, but can also help create a more transparent and accountable zakat ecosystem. Therefore, synergy between scholars, academics, and technology practitioners is needed in developing an AI system that is in accordance with maqashid sharia principles. Thus, AI can be an effective solution in supporting better and more beneficial zakat management for the people.

Problem Formulation

In the management of zakat funds in Indonesia, the use of Artificial Intelligence (AI) offers efficiency and accuracy in the distribution and management of funds. However, the implementation of this technology also raises various ethical and legal challenges in the perspective of Islamic economics. Therefore, this research seeks to answer several main questions as follows:

1. How is the application of Artificial Intelligence in the management of zakat funds in Indonesia?
2. What are the ethical challenges that arise in the utilization of AI in the zakat management system from the perspective of Islamic economics?
3. How is the review of sharia economic law on the use of AI in the management of zakat funds?
4. What are the solutions and recommendations so that the implementation of AI in zakat management remains in accordance with sharia principles?



This problem formulation will be the basis for analyzing the impact of AI technology on zakat fund governance, especially in ensuring that technological innovation remains in line with ethical values and Islamic law.

Research Objectives

This research aims to:

1. Analyzing the application of Artificial Intelligence (AI) in the management of zakat funds in Indonesia, including its benefits and efficiency in the process of collecting, distributing, and reporting zakat funds.
2. Identify and examine the ethical challenges that arise in the utilization of AI in the zakat management system, especially from the perspective of Islamic economics.
3. Examining the sharia economic law review of the use of AI in the management of zakat funds, to ensure its compliance with sharia principles.
4. Develop recommendations related to the implementation of AI in zakat management, so that it can be optimized without violating ethical values and Islamic law.

With this purpose, the research is expected to provide insight for zakat management institutions, regulators, and other stakeholders in utilizing AI effectively and in accordance with sharia principles.

Research Methods

This research uses a qualitative approach with the method of library research and descriptive analysis. This approach was chosen to deeply understand the utilization of Artificial Intelligence (AI) in the management of zakat funds in Indonesia and to review the ethical aspects and related sharia economic law.

1. Type of Research

This research is juridical-normative and descriptive-analytical, which aims to analyze the concept and application of AI in zakat management as well as its relevance to the principles of sharia economics and Islamic law.

2. Data Source

The data in this study were obtained from secondary sources, which consisted of:

- a. Primary Sources: Qur'an, Hadith, fatwas of scholars, and regulations related to zakat and Islamic financial technology in Indonesia.
- b. Secondary Sources: Books, scientific journals, articles, reports from zakat management institutions, and academic studies related to AI and Islamic economics.

3. Data Collection Technique

Data were collected through literature study, by reviewing various scientific references and regulations that discuss the utilization of AI in zakat as well as relevant aspects of ethics and Islamic law.

4. Data Analysis Technique

The data obtained was analyzed using the descriptive qualitative analysis method, which included the following steps:

- a. Data Classification - Grouping data based on the main themes, namely AI utilization, ethical challenges, and sharia economic law review.



- b. Data Interpretation - Analyze data based on the perspective of Islamic economics and applicable regulations.
- c. Inference - Drawing conclusions and recommendations based on the research findings.

This method is expected to provide a comprehensive understanding of the opportunities and challenges in the application of AI for zakat management in Indonesia in the context of sharia economic ethics and law.

The following are 8 previous studies that are relevant to the topic of *Utilization of Artificial Intelligence in the Management of Zakat Funds in Indonesia: A Review of Ethics and Sharia Economic Law*:

Previous Studies

1. Ali & Jadidah (2024), *The Role of Technology in Optimizing the Collection and Distribution of Zakat and Waqf*. This research focuses on investigating an in-depth understanding of the various phenomena of technological innovation applied to this issue, including the use of digital platforms, blockchain, and artificial intelligence to overcome traditional challenges in the distribution of charitable funds. The result of the research is that there is a positive impact of technology adoption on increasing community participation, renewing the fund collection system, and expanding the reach and operational efficiency of zakat and waqf institutions.
2. Masaguni¹ et al. (2024), *Utilization of Artificial Intelligence (Ai) in Improving Economic and Financial Inclusion*. The results showed that the use of Artificial Intelligence (AI) chatbots and virtual assistants had a significant impact on service and user satisfaction, as well as providing confidence in decision making so as to increase economic and financial inclusion for the community. The use of artificial intelligence (AI) has great potential to improve economic and financial inclusion by providing easier, more efficient and affordable access to financial and economic services for those who were previously marginalized.
3. Mufid (2024), *Technology Implementation in Zakat, Infaq, Shadaqah, and Waqf Management: A Case Study of Digital Platforms*. The findings show that the implementation of technology in ZISWAF management has provided various benefits, including increased efficiency, transparency, and accessibility for the community in donating and receiving benefits from ZISWAF. Nevertheless, there are also some challenges faced in the implementation of this technology, such as data security, difficulties in reaching communities that are less accessible by technology, and paradigm shifts in ZISWAF management. Therefore, efforts are needed to continue developing this technology according to the needs and context of the community, as well as to increase public understanding of the importance of ZISWAF in supporting the welfare of the people.
4. Salsabila (2024), *Analysis of Technology Utilization in Zakat Management in the Digital Era*. The results show that the utilization of technology, such as mobile applications, blockchain, and big data, provides many conveniences in the collection and distribution of zakat. However, there are a number of challenges such as data security, low digital literacy, and lack of public trust in the digital zakat system. The



recommendation is to strengthen regulation and public education to maximize the benefits of digital zakat.

5. Ningsih et al. (2024), *The Role of Blockchain Technology in Improving Transparency and Accountability of Zakat Management*. This research shows that there are problems and offers strategies for blockchain zakat management. The role of amil zakat and muzaki is important in the implementation of zakat using blockchain technology to manage zakat properly, efficiently, accountably and professionally to the eight asnaf.
6. Hartono (2024), *Sharia Economic Transformation in the Era of the Industrial Revolution 4.0: A Literature Review of the Impact of Digital Technology in the Islamic Economy*. The results of this study show that digital technology has brought many opportunities to increase efficiency, transparency, and access to Islamic financial services. However, the implementation of this technology also faces challenges, such as the low adoption of technology in Islamic financial institutions and data security risks.
7. Makarim & Hamzah (2024), *The Role and Potential of Digitalization in Zakat Management: A Systematic Literature Review*, The results of this study indicate that digitalization in zakat management has an important role in the collection and distribution of zakat. Technologies such as blockchain and the use of bitcoin currency also have the potential to increase the role of digitization of zakat management in the future. This research can be used as a reference for further research on the digitalization of zakat.
8. Luntajo & Hasan (2023), *Optimizing the Potential of Zakat Management in Indonesia through Technology Integration*. The results of his research are Combining digital media offers a convenient and secure zakat payment system, expanding participation and increasing efficiency. Blockchain technology ensures transparency, traceability, and accountability in zakat transactions, reducing the risk of fraud and corruption. The technology allows zakat funds to be tracked in real-time, increasing transparency and facilitating informed decision-making. Technology integration also provides access to valuable data and analytics, enabling targeted allocation of zakat funds for maximum welfare impact. However, successful integration requires strong governance, capacity building, and clear policies to ensure technology security, integrity, and effective utilization in zakat management. Optimizing the potential of technology integration towards zakat in Indonesia promises to increase transparency, efficiency, and impact on welfare, which in turn contributes to the betterment of society.

Theoretical Studies

The Concept of Artificial Intelligence (AI) and its Implementation in Islamic Financial Management

Artificial Intelligence (AI) is a technology that enables computer systems to perform tasks that usually require human intelligence, such as learning, decision making, and data processing automatically (Russell & Norvig, 2016). In the context of Islamic finance, AI is starting to be widely applied in the Islamic banking system, halal investment, and zakat financial management to improve efficiency and transparency (Mufid, 2024). AI in the management of zakat funds can be used to detect eligible beneficiaries (mustahik), optimize the distribution of funds, and monitor the sharia compliance of various transactions (Ali & Jadidah, 2024). This



technology allows zakat managers to analyze big data in real-time, so that the allocation of funds can be done more quickly and accurately.

Zakat in Sharia Economic System

Zakat is an obligation in Islam that serves as a wealth redistribution mechanism to reduce economic inequality (Nury & Hamzah, 2024). In Islamic economics, zakat acts as a social instrument that not only has spiritual value, but also contributes to the welfare of society by allocating funds to those in need (Khalida, 2023). According to Law No. 23 Year 2011 on Zakat Management in Indonesia, zakat management institutions have the duty to collect, distribute, and report zakat funds in a transparent and accountable manner. Therefore, the utilization of technology such as AI is expected to increase the effectiveness of zakat management and ensure that funds are channeled to mustahik who are truly entitled (Khalida, 2023)

Ethics in the Use of Artificial Intelligence in Zakat Management

In the Islamic perspective, the use of AI in zakat management must still be based on Islamic ethical principles, such as justice (*al-adl*), transparency (*amanah*), and partiality to the needy (*maslahah*) (Miftah & Bondowoso, 2024). According to Thian (2024), technology should be used for the benefit of the people and should not cause injustice or exploitation. Some of the ethical challenges in utilizing AI for zakat management include potential algorithm bias, beneficiary data security, as well as the risk of making decisions that do not fully consider humanitarian aspects (Indranata, 2024). Therefore, AI must be designed with ethical principles that are in accordance with sharia values so that the benefits can be felt fairly and equitably (Abubakar & Ridha, 2024).

Sharia Economic Law on the Utilization of AI in Zakat Management

Sharia economic law regulates that all transactions and financial systems must comply with sharia principles, including the use of AI for zakat management. According to DSN-MUI Fatwa No. 116/DSN-MUI/IX/2017 on Sharia Electronic Money, technology in the Islamic financial system must ensure transparency, fairness, and not contain elements of gharar (uncertainty), riba (interest), and maisir (speculation) (Novitarani, 2018).

In the context of AI, some of the legal aspects that need to be considered are:

1. Shariah Compliance - AI should be developed with Shariah-compliant mechanisms and receive oversight from Islamic finance jurists (Anwar et al., 2023).
2. Algorithm Transparency - AI systems should have a level of transparency that allows zakat managers and regulators to understand the workings and decisions made by the algorithm (Judijanto et al., 2024).
3. Data Protection - The use of AI in zakat must ensure the security and privacy of mustahik data so that it is not misused (Suganda et al., 2024) .

Implementation of AI in Zakat Management in Indonesia: Case Studies and Challenges

In Indonesia, several zakat management institutions have begun to apply digital technology in the management of zakat funds. For example, the National Amil Zakat Agency (BAZNAS) has used a digital system to improve the transparency and efficiency of zakat distribution (Rohmaniyah, 2021) . However, the use of AI in particular is still in its early stages and faces several obstacles, such as the lack of technological infrastructure, limited regulations, and



resistance from some communities to the automation of zakat management (Nazara et al., 2024).

Other challenges in the implementation of AI in zakat management in Indonesia include:

- a. The lack of regulations governing the use of AI in the zakat system, resulting in legal uncertainty (Indranata, 2024) .
- b. Potential bias in AI algorithms, which can affect decisions in assessing mustahik who are entitled to receive zakat (Monady et al., 2024)
- c. The need to increase digital literacy among zakat managers so that the utilization of AI can be done optimally (Muzaki, 2024)

This theoretical study shows that the use of AI in the management of zakat funds in Indonesia has great potential to improve efficiency and transparency. However, its implementation must still consider aspects of Islamic ethics and sharia economic law. With clear regulations and supervision from relevant authorities, AI can be an innovative solution for a fairer and more effective zakat management.

Discussion And Discussion

The Role of AI in Optimizing the Management of Zakat Funds

Artificial Intelligence (AI) has become an important part of various sectors, including the management of zakat funds in Indonesia. The implementation of AI in the management of zakat funds provides efficiency and increases the transparency and accountability of zakat institutions. By utilizing this technology, the process of collecting, managing, and distributing zakat can be done more optimally, in accordance with the principles of Islamic economics.

One of the main roles of AI in optimizing the management of zakat funds is through automating the process of collecting, managing, and distributing zakat. AI technology allows the system to identify zakat obligors (muzakki) based on economic data, financial transactions, and zakat payment history. Thus, AI can optimize zakat collection efficiently and accurately (Salsabila, 2024) . In addition, AI also assists in the management of zakat funds by analyzing the amount of funds available, determining the priority scale of distribution, and estimating zakat needs based on previous data trends (Setiyono & Prapanca, 2021) . In terms of distribution, AI can be used to identify mustahik who are entitled to receive zakat based on algorithms that consider the social and economic aspects of the beneficiaries (Listiana et al., 2023).

AI also plays a role in predictive analysis to determine mustahik and zakat needs (Amzah & Nasution, 2024) . With machine learning algorithms, AI can process data from various sources, such as poverty data, regional economic conditions, and other social factors to determine the priority of zakat fund distribution (Adif, 2024). This analysis allows zakat institutions to distribute funds more effectively and on target. In addition, AI can predict trends in zakat needs based on historical data and evolving economic patterns. For example, in situations of economic crisis or natural disasters, AI can provide recommendations for fund allocation that are more adaptive and responsive to community needs (Maelani et al., 2024) . Thus, the use



of AI in predictive analysis provides significant benefits for zakat institutions in optimizing the distribution of funds in accordance with the principles of justice in Islam.

The application of AI in improving the transparency and accountability of zakat institutions is also an important aspect in the management of zakat funds. One of the main challenges in zakat management is to ensure that the collected funds are managed transparently and can be accounted for to muzakki and the wider community. AI enables a more accurate and real-time reporting system, so that zakat institutions can provide more transparent reports on the receipt and distribution of zakat funds (Ali & Jadidah, 2024) . In addition, blockchain technology supported by AI can also be used to record zakat transactions permanently and cannot be manipulated, thus increasing public trust in zakat institutions (Nazara et al., 2024) . The use of AI in auditing and monitoring the distribution of zakat funds also helps in ensuring that zakat funds actually reach the rightful mustahik. Through AI-based systems, zakat institutions can monitor the use of funds by zakat recipients and ensure that the assistance provided is in accordance with their needs (Siska, 2021). With an AI-based monitoring system, the potential for misuse of zakat funds can be minimized, thus maintaining the credibility of zakat institutions in the eyes of the public (Chairul Suhendra et al., 2024) . Therefore, the utilization of AI in improving the transparency and accountability of zakat institutions is very important in supporting the governance of zakat funds in accordance with ethical principles and Islamic economic law.

In the context of Islamic economic ethics and law, the use of AI in the management of zakat funds must be done by considering the principles of justice, benefit, and prudence. Islam emphasizes the importance of trust in managing people's wealth, including zakat funds, so the AI technology used must be ensured to operate in accordance with sharia values (Al Kutsi & Kom, 2024) . In addition, regulations related to personal data protection must also be considered so that there is no misuse of information that can harm muzakki and mustahik (Mushdalifah et al., 2024) . With management in accordance with sharia economic law, AI can be a very useful tool in improving the effectiveness and efficiency of zakat fund management in Indonesia.

Overall, the use of AI in the management of zakat funds in Indonesia brings various significant benefits, ranging from the automation of the zakat collection and distribution process, predictive analysis in determining mustahik and zakat needs, to increasing transparency and accountability of zakat institutions. Nevertheless, the application of this technology must still be done by considering the ethical and legal aspects of sharia economics to remain in line with Islamic principles. With the right approach, AI can be an effective solution in improving the management of zakat funds and the overall welfare of the people.

Analysis of AI Utilization in Zakat from the Perspective of Islamic Ethics and Sharia Economic Law

The utilization of Artificial Intelligence (AI) in zakat management provides various advantages that support the principles of efficiency, justice, and transparency in the distribution of zakat funds. AI can assist in processing mustahik and muzaki data more quickly and accurately, thus reducing the potential for human error in the zakat administration process (Amzah &



Nasution, 2024). AI technology also allows mapping mustahik needs based on real-time data analysis, so that zakat funds can be optimally allocated according to the most urgent needs (Sulaiman et al., 2021).

In addition, AI is able to increase transparency in zakat management by using blockchain technology and smart contracts, which ensure that every transaction is permanently recorded and can be audited by any interested party (Khan & Ahmed, 2022). With this transparency, public trust in zakat management institutions can increase, so that the potential for collecting zakat funds can be greater.

Potential AI Risks and Challenges: Dehumanization, Algorithm Bias, and Data Protection

Although AI provides many benefits, some risks need to be considered in its application to zakat management (Hartono, 2024). One of the main challenges is dehumanization, where decisions previously made by humans are now taken over by algorithms (Pradana, 2024). This has the potential to reduce the empathy aspect in zakat distribution, which is an important value in Islam. Therefore, there needs to be a balance between the use of AI and human intervention so that human values are maintained (Hasan et al., 2021).

In addition, algorithm bias is a serious challenge that can affect fairness in zakat distribution. If the data used to train the AI model does not reflect the diversity of mustahik, then the resulting decision could be unfair or discriminatory towards certain groups (Bengio et al., 2020). Therefore, it is important to ensure that AI algorithms used in the zakat management system are developed with the principle of fairness and tested regularly to avoid bias that harms certain groups.

Data protection is also a crucial issue in AI implementation. The use of AI in zakat management requires the collection and analysis of mustahik personal data, which has the potential to cause privacy violations if not managed properly (Zubair, 2021). In the context of Islamic economic law, the protection of personal data is part of the mandate that must be maintained so that it is not misused.

In Islam, the use of technology must be in accordance with the ethical principles that have been established in sharia. One of the main principles in zakat management is amanah, which means trust and responsibility in managing zakat funds so that they reach those who are entitled (Al Kutsi & Kom, 2024). AI can help improve this trustworthiness by providing a more accurate and transparent system in distributing zakat funds.

The principle of fairness is also an important factor in the application of AI in zakat. As mentioned earlier, algorithm bias must be avoided so that the distribution of zakat remains fair and does not disadvantage certain groups. Therefore, in the development of AI for zakat management, it is important to ensure that the system used can facilitate social justice and mustahik welfare without discrimination (Listiana et al., 2023).

The principle of the benefit of the people is the main consideration in the application of AI in zakat. AI technology should be used to provide greater benefits for the people, such as



increasing the efficiency of zakat distribution, ensuring transparency, and avoiding misuse of zakat funds (Luntajo & Hasan, 2023) . Therefore, the utilization of AI in zakat management should be designed by considering social welfare as the main goal.

Sharia Economic Law Review of the Use of AI in Zakat Management

As explained in the previous description, the development of artificial intelligence (technology AI) has brought significant changes in various aspects of life, including in the management of zakat. As one of the pillars of Islam, zakat has an important role in the welfare of the people. Therefore, efficiency and transparency in its management are the main needs. In the perspective of Islamic economic law, the application of AI in zakat management needs to be studied so that it is in line with sharia principles (Karim, 2021).

Islamic economic law is a collection of rules governing economic aspects based on Islamic principles. In the management of zakat, Islamic economic law emphasizes the principles of justice, transparency, and benefits for the people (Antonio, 2020). Therefore, the use of AI in zakat management must be in line with maqashid sharia and not contradict Islamic values.

AI can be applied in various aspects of zakat management, such as mustahik identification, zakat calculation, and zakat distribution more efficiently. AI algorithms can analyze data quickly and accurately, thus increasing the effectiveness of zakat distribution (T. Rahman, 2022) . In addition, AI technology can help zakat institutions in detecting potential fraud and ensuring that zakat funds are distributed in a targeted manner. In the perspective of Islamic economic law, the application of AI in zakat management is acceptable as long as it fulfills the principles of sharia. Some of the principles that must be considered include:

Fairness: AI should be used fairly without discrimination against mustahiks (Ibrahim, 2021).

Honesty and Transparency: Data processed by AI must be sourced from valid and verifiable information (Fauzan, 2023).

Efficiency and Benefit: AI must be able to improve efficiency in the collection and distribution of zakat so that the benefits are greater (Yusuf, 2020).

Oversight and Accountability: Zakat institutions must still have control over the AI system to prevent algorithm errors or data misuse (Hassan, 2022). In the digital era, artificial intelligence (AI) has become part of various aspects of life, including in zakat management. AI offers efficiency in collecting, distributing, and monitoring zakat so that it can improve transparency and accuracy. However, from the perspective of sharia economic law, the use of AI in zakat management must be carefully studied to remain in line with Islamic principles (T. Rahman, 2022). Islamic economic law emphasizes the principles of justice, benefit, and transparency in zakat management. AI can help in identifying mustahik more precisely based on available data, so that zakat distribution becomes more efficient. However, the main challenge in the application of AI is the validity of the data and reliance on systems that may experience errors or biases (Ali & Jadidah, 2024). Therefore, it is important to ensure that the AI algorithm used does not violate the principle of justice in zakat distribution. In terms of fiqh law, zakat is an obligation for Muslims that must be managed with trust. The use of AI in this process must be closely monitored so as not to eliminate the human responsibility aspect of zakat management (Hassan, 2022). Scholars agree that technology can be a tool in optimizing zakat,



but the final decision must still involve human considerations that are in accordance with sharia rules.

One of the main issues in the use of AI is the aspect of transparency and accountability. Sharia economic law requires that zakat management is conducted in an open and accountable manner. If AI is used in the recording and distribution of zakat, then there must be an audit mechanism that allows for verifying the decisions taken by the AI system (Fauzan, 2023). This aims to prevent system errors that could have an impact on injustice in the distribution of zakat.

In addition, ethical aspects in the use of AI are also a concern in sharia economic law. AI must be developed and used with due regard to the maqasid principles of sharia, namely protecting religion, soul, mind, offspring, and property. If AI is used without clear supervision, there is a possibility of misuse of data that contradicts the principles of protection of property and individual privacy in Islam (T. Rahman, 2022). Therefore, regulations related to data protection in the use of AI for zakat management are very important.

In the context of regulation, some Muslim countries have started to draft rules governing the use of technology in the Islamic economy, including zakat. These regulations cover sharia compliance aspects in the utilization of AI, including in terms of mustahik verification, zakat payment automation, and monitoring the distribution of zakat funds (Indranata, 2024). With appropriate regulations in place, AI can be a tool that helps manage zakat more optimally without violating Islamic principles.

With the various benefits that AI offers, zakat institutions need to work together with scholars and technology experts in developing guidelines for the use of AI in zakat management. A comprehensive study of the legal aspects of Islamic economics in the application of AI is needed so that this technology brings benefits to Muslims and does not cause doubts in the management of zakat (Hassan, 2022). Therefore, evaluation and supervision of the use of AI in the zakat system must be carried out regularly to ensure its compliance with Islamic law.

Challenges and Solutions in Implementing AI for Zakat Management

Artificial Intelligence (AI) has become a growing technology in various sectors, including in zakat management. AI has great potential in improving efficiency, accuracy, and transparency in zakat distribution. However, the implementation of AI in the zakat system cannot be separated from various challenges that need to be overcome to provide maximum benefits for Muslims.

One of the main challenges in applying AI for zakat management is the limitation of accurate and structured data. AI requires high quality data to work optimally. Unfortunately, in many countries, data about mustahik (zakat recipients) and muzaki (zakat givers) are still not well digitized (T. Rahman, 2022). Many zakat management institutions still use manual systems that are less efficient, making it difficult to integrate AI in the existing system.



In addition, another challenge is the lack of understanding and readiness of human resources in adopting AI technology. Many zakat management institutions do not have experts who understand how AI works and how to apply it in the zakat distribution process (Fattah et al., 2022) . Without adequate training, AI is difficult to implement effectively. In terms of regulation, many countries do not have a clear legal framework related to the utilization of AI in the zakat system. Unsupportive regulations can hinder the development of this technology, especially in the aspects of data security and privacy protection of muzaki and mustahik (Hassan, 2022) . This issue becomes crucial because AI processes sensitive personal data, so it must be ensured that the information managed remains safe and not misused.

Public trust in AI in zakat management is also a significant challenge. Many people are still skeptical of the use of AI in the Islamic financial system, especially in terms of transparency and fairness of zakat distribution (Fauzan, 2023). They are worried that AI cannot understand sharia principles well, which may lead to errors in zakat distribution. To overcome these challenges, several strategic solutions are needed. One of them is the comprehensive digitalization of zakat data so that AI can work optimally. Zakat institutions must start switching to a structured data-based system that can be accessed in real-time. Thus, AI can be used to identify mustahik who are entitled to receive zakat more accurately and efficiently (T. Rahman, 2022).

In addition, human resource capacity building should also be prioritized. Zakat management institutions need to conduct training and education for zakat managers so that they understand how AI works and its benefits in improving the efficiency of zakat management (Maulana & Laksamana, 2023). With better understanding, they will be more ready to adopt this technology. In terms of regulation, the government and related authorities need to develop a clear policy regarding the use of AI in zakat management. This regulation should include aspects of data security, privacy, as well as compliance with sharia principles so as not to cause controversy among the public (Hassan, 2022). Supportive regulations will provide legal certainty for zakat institutions that want to implement AI in their system. To increase public trust, transparency in the use of AI must be guaranteed. Zakat institutions need to provide clear information on how AI works in determining zakat recipients and ensure that the process is by sharia principles. Periodic audits can also be conducted to ensure that the AI system is functioning properly and does not cause bias in the distribution of zakat (Fauzan, 2023). Despite the challenges, the application of AI in zakat management still has great potential to improve the efficiency and transparency of the zakat system. With the right solution, AI can be a very useful tool in ensuring that zakat funds are managed better and on target. Therefore, collaboration between the government, zakat institutions, and the community is needed to ensure that the implementation of AI in the zakat system can run optimally and provide maximum benefits for Muslims.

AI Compliance with Islamic Legal Principles in Financial Transactions

The development of artificial intelligence (AI) technology has brought about a major transformation in the financial sector, including in sharia-based transactions. The use of AI in Islamic financial transactions aims to improve efficiency, accuracy, and transparency in various



aspects of financial services. However, the application of AI must remain within the corridors of Islamic law so as not to violate the principles set forth in sharia (Karim, 2021) .

Islamic law in financial transactions is based on the principles of fairness, transparency, and avoidance of gharar (uncertainty), riba (interest), and maisir (speculation). In this context, AI used in financial transactions must be able to ensure that the decisions and recommendations made do not contradict Islamic law. AI algorithms should be designed to avoid financial instruments that contain elements of usury or speculation which are prohibited in Islam (Antonio, 2020) . One of the main challenges in the application of AI in Islamic financial transactions is the supervision of the decisions taken by the machine. AI works based on pre-programmed algorithms and relies on historical data to make predictions or decisions. Therefore, Islamic financial institutions need to ensure that the algorithms used have gone through a verification process by Islamic jurists so as not to cause deviations from sharia principles (M. A. Rahman, 2024).

In addition, AI must also be able to identify risks that are per sharia principles. In Islamic financial transactions, transparency is an important aspect to avoid gharar. AI should be designed to provide clear and accurate information to customers so that they can make decisions under Islamic principles. This can be achieved through the use of blockchain technology that enables transparent and immutable transaction records (Ibrahim, 2021). On the other hand, AI can also help in the management of Islamic investment portfolios. In sharia-based investments, the selection of assets must follow halal principles, i.e. they must not be involved in prohibited sectors such as alcohol, gambling, and entertainment industries that are contrary to Islamic values. By using AI-based algorithms, Islamic financial institutions can automatically filter out assets that do not comply with sharia principles, thus ensuring that investments made remain halal (Fauzan, 2023). However, the use of AI in Islamic financial transactions also faces various challenges. One of them is the need for clear regulations related to the application of AI in the Islamic financial sector. This regulation should include aspects of supervision, transparency, and compliance with sharia principles to avoid misuse in its application. Islamic financial authorities need to issue specific fatwas and guidelines regarding the use of AI in Islamic financial transactions (Hassan, 2022).

In addition, ethical factors in the use of AI must also be considered. AI used in Islamic financial transactions should be designed with Islamic moral values in mind, such as honesty, fairness, and social responsibility. Therefore, AI developers working in the Islamic finance sector should have a deep understanding of sharia principles so that the technology developed is not only efficient but also ethical (Abdhul, 2022) . In the global context, several countries have started to adopt AI in Islamic financial transactions. Countries such as the United Arab Emirates and Malaysia have developed AI technology to assist Islamic banking in managing transactions and investment portfolios. The implementation of AI in Islamic banking in these countries shows that with proper regulation and supervision, AI can be an effective tool in improving the efficiency and compliance of Islamic financial transactions (Ali & Jadidah, 2024).

In conclusion, the application of AI in Islamic financial transactions has great potential to improve efficiency, accuracy, and transparency. However, its application must remain within the boundaries of Islamic law so as not to violate sharia principles. Clear regulations, strict



supervision, and the application of Islamic ethical values in the development of AI technology are key to ensuring that AI can be used safely and following Islamic finance principles (Aziz, 2023). In the perspective of sharia economic law, every financial transaction, including those using AI, must fulfill sharia principles such as honesty, transparency, and fairness (Djamil, 2023). AI used in zakat management must ensure that it does not violate the principles of gharar (uncertainty), riba (interest), and maysir (speculation), to remain per Islamic law.

Fatwa and Regulations Related to the Use of Technology in Zakat

The rapid development of technology has had a significant impact on various aspects of life, including in the management of zakat. Digitalization and technological innovation have enabled the process of collecting, managing and distributing zakat to be more efficient and transparent. However, the application of technology in zakat also presents new challenges that require regulation and fatwa from Islamic authorities to ensure its compliance with sharia principles (T. Rahman, 2022).

Fatwas play an important role in guiding the use of technology in zakat. Fatwa boards in various countries have issued various provisions regulating how technology can be used in zakat management, including the use of digital platforms for online zakat payment, mustahik verification with artificial intelligence (AI), as well as blockchain to ensure transparency in zakat distribution (Yudha et al., 2020). This fatwa aims to ensure that the technology used does not conflict with sharia principles, such as avoiding elements of usury, gharar, and maysir. One of the important aspects in technology-based zakat regulation is data security and privacy. Many countries have adopted regulations related to personal data protection in digital zakat transactions to ensure that muzaki and mustahik information is not misused (Hassan, 2022). In addition, regulations also stipulate that zakat management institutions that use technology must have sharia certification to ensure that their operations are by Islamic law.

In some countries, regulations related to technology-based zakat have been drafted in the form of laws governing digital zakat governance. This regulation includes a mechanism for collecting zakat through e-wallets, blockchain-based applications for recording zakat transactions, and a digital monitoring system by the national zakat authority (Fauzan, 2023). With this regulation, it is expected to increase transparency and accountability in zakat management, so that public trust in zakat institutions will increase. Financial technology (fintech) has also started to be applied in zakat management in some Muslim countries. Some fintech platforms have obtained halal fatwa from Islamic authorities, which allow the use of this technology to facilitate online zakat payment and increase the effectiveness in distributing funds to mustahik (T. Rahman, 2022). With clear regulations in place, fintech can be an effective tool in increasing zakat revenue and ensuring its optimal distribution.

Despite the many benefits derived from the application of technology in zakat, challenges remain, especially in the aspect of compliance with sharia principles. Therefore, the role of Islamic authorities and government is crucial in supervising and ensuring that any technological innovation applied in zakat remains within the corridors of Islamic law (Arwani & Priyadi, 2024). Strict regulations are needed to prevent the misuse of technology in zakat



management, including the possibility of data manipulation and uncertainty in zakat distribution.

With the development of technology, Islamic authorities and the government need to continue issuing relevant fatwas and regulations so that zakat management can continue to evolve per the times without abandoning sharia principles. Collaboration between scholars, regulators and technology practitioners is needed to ensure that technology can be used as an effective tool in increasing the usefulness of zakat for the community (Hassan, 2022) . Therefore, evaluation and updating of regulations and fatwa related to technology in zakat should be done periodically to accommodate the developments that occur in this digital era. Several fatwa institutions have issued guidelines related to the use of technology in zakat management. The Indonesian Ulema Council (MUI) emphasizes that the technology used must remain within the sharia corridor and not cause harm to the people (Lisnawati, Zaki, et al., 2024) . In addition, regulations from the Financial Services Authority (OJK) and Bank Indonesia (BI) also play a role in ensuring that AI in zakat remains in accordance with applicable legal standards.

Balance between Technological Innovation and Sharia Values

In the rapidly growing digital era, technological innovation has brought about major changes in various aspects of life, including in the economic, financial, educational, and social sectors. This rapid technological advancement also poses a challenge in maintaining a balance with sharia values that have become a guideline for Muslims. Therefore, it is important to ensure that technological developments are in line with Islamic principles so that the benefits can be felt without violating religious rules (T. Rahman, 2022). One of the main challenges in maintaining this balance is the development of financial technologies, such as fintech and cryptocurrencies, which offer convenience and efficiency in transactions. However, these technologies also present risks such as speculation, usury, and gharar that are contrary to sharia principles (Hassan, 2022). Therefore, there is a need for strict regulation and supervision from Islamic financial institutions so that technological innovations can be implemented while adhering to Islamic values. In the business and trade sector, the use of artificial intelligence (AI) and big data has enabled companies to improve efficiency and personalize services. However, the use of these technologies can also pose ethical dilemmas, such as the exploitation of personal data and unfair business practices (Fauzan, 2023). Therefore, in its application, companies must prioritize the principles of justice, transparency, and accountability so that technological innovation remains within the boundaries of sharia. In addition to the business world, technology is also developing in the field of Islamic education, such as e-learning and Al-Qur'an teaching applications. These innovations provide easy access to religious knowledge, but also face challenges in ensuring that the content delivered is truly following Islamic teachings (Ahmad, 2020). For this reason, the development of Islamic education technology must involve competent scholars and academics to provide optimal benefits for Muslims. In the health sector, technologies such as biotechnology and telemedicine are increasingly being used to improve health services for the public. However, some innovations in this field, such as genetic engineering and the use of artificial organs, raise ethical questions from a sharia perspective (T. Rahman, 2022). Therefore, an in-depth study involving fiqh experts and scientists is needed to determine the limits of the application



of technology in the medical world so that it remains by Islamic values. One of the solutions in maintaining the balance between technological innovation and sharia values is to build Islamic-based digital awareness and literacy. Muslims need to be given sufficient understanding of the benefits and risks of technology so that they can use it wisely per sharia principles (Hassan, 2022). In addition, the government and Islamic institutions need to collaborate in designing regulations that can support the development of technology in line with Islamic values. In addition to regulations, the role of Islamic scholars and academics is also very important in guiding the application of technology in everyday life. With clear fatwas and guidelines, Muslims can be more confident in utilizing technology without fear of violating religious rules (Fauzan, 2023). Therefore, the synergy between technology and Islamic values must continue to be strengthened so that innovation can bring wider benefits without ignoring the principles of sharia.

Overall, technological innovation has great potential in improving the welfare of society, but it must be implemented with Islamic values in mind. With strict regulations, Islamic-based digital literacy, and the role of scholars and academics in providing guidance, a balance between technology and sharia can be achieved. Therefore, collaboration between various parties is needed so that technology can be utilized optimally without violating religious principles.

Conclusions And Suggestions

Conclusion

The utilization of Artificial Intelligence (AI) in the management of zakat funds in Indonesia has a significant impact in improving transparency, efficiency, and accountability in the distribution of zakat funds. AI can assist in collecting mustahik and muzaki data more systematically, improve accuracy in needs analysis, and optimize zakat distribution to be more targeted. This technology also enables zakat management bodies to reduce human errors in administration and distribution. From the perspective of Islamic economic law, the application of AI must remain based on sharia principles such as justice, honesty, and the benefit of the people. This means that AI-based systems used in the management of zakat funds must be designed to avoid the element of gharar (uncertainty) and ensure that the decisions taken remain transparent and by the provisions of Islamic law. In addition, ethical aspects are also a major concern, especially in maintaining the security of muzaki and mustahik data and preventing misuse of information.

However, although AI provides various benefits, there are still some challenges in its application, such as limited technological infrastructure in some areas, lack of digital literacy among zakat managers, and potential algorithm bias in AI systems that can affect zakat distribution decisions. Therefore, synergy between zakat management institutions, government, and other stakeholders is needed to ensure the optimal implementation of AI by sharia principles.

Advice

1. Improving Digital Literacy - Zakat management institutions need to provide training for zakat managers and amil in understanding and operating AI- based systems.



This is so that they can optimize technology in zakat management without ignoring sharia principles.

2. Strengthening Regulations - The government and relevant authorities need to design clear regulations regarding the use of AI in zakat management so that it remains in accordance with the principles of sharia economic law and protects the rights of muzaki and mustahik.
3. Collaboration with Technology and Shariah Experts - Synergy between technology experts, scholars, and shariah economists is needed to ensure that the AI systems used are not only efficient but also compliant with Islamic ethics.
4. Data Security and Privacy - Zakat managers must ensure that the AI system implemented has a strong security mechanism to protect muzaki and mustahik data from misuse or information leakage.
5. Technology Infrastructure Improvement - The government and Islamic philanthropic institutions need to support the development of digital infrastructure so that AI technology can be implemented evenly, including in remote areas.

With these steps, it is expected that the use of AI in the management of zakat funds can provide maximum benefits to the community, improve the efficiency of zakat distribution, and still comply with the principles of ethics and sharia economic law.

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AI's Mediating Role in Enhancing Efficiency and Quality Management in 3D Game Animation Production

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Abstract

This study examines how artificial intelligence (AI) acts as a key mediator in improving efficiency and quality management within 3D game animation production processes. Reviewing twelve empirical studies, this research identifies three main areas where AI contributes significantly: automating repetitive tasks, supporting creativity, and enhancing interactive processes. Findings indicate notable improvements, such as reducing production times from several weeks to a matter of days, notably an 11-day reduction in certain tasks, and lowering task volumes by as much as 43%. Creative assistance tools driven by AI have also enabled artists to significantly enhance animation realism and accuracy, achieving up to 81.5% accuracy improvements. Furthermore, AI's ability to simplify workflows has facilitated better collaboration across diverse team members, even those without prior technical expertise.

Keywords: Artificial Intelligence, 3D Game Animation, Productivity, Quality Management, Efficiency, Workflow Optimization.

Introduction

The intricate nature and competitive landscape of contemporary game animation production have compelled studios to adopt innovative technological interventions. Within this context, artificial intelligence (AI) has emerged as a pivotal facilitator for augmenting productivity and enhancing quality. This manuscript conducts a thorough review of extant literature to delineate specific AI-driven methodologies that exert a significant influence on the realm of 3D game animation production.

AI-driven automation empowers studios to optimize laborious and repetitive functions such as rigging, motion capture processing, and texture generation, thereby considerably diminishing manual labor and expediting production timelines (Jeon & Cho, 2024). Furthermore, the ability of AI to assimilate knowledge from extensive datasets enables a more precise forecasting of animation sequences, thereby mitigating inconsistencies and enhancing the fluidity of animations (Li & Morris, 2024).

Literature Review

The multifaceted role of artificial intelligence (AI) in the domain of game animation has, over the years, constituted the focus of an extensive array of scholarly studies and academic inquiries. In the earlier phases of this research, significant attention was devoted to exploring the automation capabilities driven by AI, particularly in the realms of motion capture technology and procedural animation methodologies, wherein these studies successfully showcased notable gains in efficiency concerning animation retargeting processes and the rendering of animations in real time (Jeon & Cho, 2024). In more contemporary explorations, the emphasis has experienced a paradigmatic shift towards the incorporation of AI as a facilitator of creativity, wherein advanced algorithms like neural networks and generative



models serve to significantly enhance the processes of texture synthesis and the animation of dynamic characters, thereby revolutionizing traditional animation practices (Li & Morris, 2024).

A plethora of studies have robustly highlighted the remarkable effectiveness of AI in significantly reducing the overall production times associated with animation, as automated animation pipelines have proven to be instrumental in streamlining a variety of repetitive tasks that would otherwise consume substantial amounts of time and resources (Byun et al., 2023). Furthermore, the influence of AI extends well beyond mere technical efficiency; it plays a pivotal role in fostering interdisciplinary collaboration by empowering individuals who may not possess specialized expertise to actively engage and contribute to the creative processes inherent in animation production (Lan et al., 2023). Nevertheless, it is imperative to acknowledge that ethical concerns persist regarding the implications of AI-generated content, particularly in relation to its potential impact on the integrity of artistic expression and the authenticity of creative works (Lee et al., 2008). The extant literature compellingly underscores the critical importance of striking a delicate balance between the advantages conferred by AI automation and the necessity for human oversight, thereby ensuring the preservation of artistic control while simultaneously harnessing the substantial efficiency improvements that such technological advancements can offer.

Methodology

This review systematically analyzes twelve empirical studies focused explicitly on professional 3D game animation contexts. These studies were selected based on rigorous criteria, emphasizing empirical evidence regarding measurable outcomes in productivity improvements and enhanced quality management facilitated by AI.

Data were collected from peer-reviewed journal articles and conference proceedings to ensure credibility and validity. Various AI implementations in animation production, ranging from machine learning-based procedural generation to AI-enhanced motion capture technologies, were considered to examine their impact on production efficiency.

Findings and Discussion

AI integration notably simplifies complex production workflows, enabling smoother interdisciplinary collaboration and transforming traditionally resource-intensive tasks into streamlined processes. Automation features driven by AI, such as advanced animation retargeting techniques, substantially reduced production times, cutting tasks down from hours or days to mere minutes (Byun et al., 2023; Jeon & Cho, 2024). In parallel, AI-assisted creativity empowered artists by providing advanced tools that significantly enhanced artistic innovation, realism, and precision in character animations.

AI-powered procedural animation techniques have demonstrated their ability to dynamically generate movements based on real-time interactions, allowing for more responsive and adaptable character animations (Lan et al., 2023). For instance, AI-driven facial animation systems leverage deep learning to create realistic expressions without the need for extensive manual keyframing (Li & Morris, 2024).



Furthermore, AI has reshaped team dynamics by facilitating smoother interdisciplinary communication and simplifying workflows, enabling designers and artists of varied skill levels to collaborate more effectively. However, these benefits were accompanied by challenges such as occasional inaccuracies in AI-generated outcomes, indicating that human oversight remains essential. The reliance on AI for procedural generation raises concerns about artistic integrity and the necessity for manual refinements to maintain creative uniqueness.

Discussion

The studies underline AI's critical role across three core aspects:

1. **Automation:** AI has remarkably revolutionized the way we handle repetitive tasks, resulting in substantial decreases in both task times and workloads. AI-powered animation retargeting has greatly enhanced efficiency by seamlessly automating intricate motion transfers between characters with diverse skeletal frameworks.
2. **Creative Assistance:** The advent of artificial intelligence has equipped artists with advanced instruments that enhance creativity and markedly improve the caliber of animation. Techniques involving AI-driven texture synthesis and environmental creation diminish the burdens of design labor, thereby allowing artists to concentrate on the meticulous refinement of artistic intricacies as opposed to engaging in monotonous, repetitive activities.
3. **Enhanced Interaction:** AI platforms have significantly advanced the immediacy of character interactions and the overall realism of virtual environments, thus augmenting the user experience. The integration of gesture recognition and AI-driven lip-syncing technologies has markedly improved the quality of real-time interaction within game animation, rendering non-playable characters (NPCs) more lifelike and captivating (Lee et al., 2008).

The analysis elucidates the superior efficacy of artificial intelligence technologies, proposing an optimal utilization ratio of AI integration (30%-70%) to enhance productivity advancements while preserving artistic integrity. The function of AI in the automation of animation workflows is progressively broadening, especially within extensive game production frameworks, wherein efficiency and scalability are paramount considerations (Byun et al., 2023).

Conclusion

The results of this investigation unequivocally indicate that artificial intelligence substantially augments both efficiency and excellence within the domain of three-dimensional game animation creation. Deliberate and strategic incorporation of artificial intelligence, along with ongoing professional development for personnel, is essential for preserving an optimal equilibrium between mechanization and human ingenuity. Although artificial intelligence is capable of automating technical components of animation, human supervision remains imperative to guarantee artistic coherence and innovative advancement.

Recommendations

Future investigations ought to concentrate on the enhancement of artificial intelligence instruments, with particular emphasis on resolving integration obstacles and improving precision. Furthermore, the promotion of extensive training initiatives and the establishment of universal standards and ethical frameworks will be essential for realizing enduring



advantages from artificial intelligence in the domain of game animation production. It is advisable that subsequent research endeavors examine the potential of artificial intelligence in real-time rendering and adaptive narrative techniques to uncover novel possibilities in the realm of interactive entertainment.

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A Conceptual Framework for Compliance Behavior Of Income Zakat Among University Lecturers In Penang

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Abstract

This paper aims to explore characteristics that may influence Muslims' zakat activity based on income. In this study, lecturers from Penang universities were used as a sample, and they were sent questionnaires asking them to indicate their level of agreement on several criteria that would influence their willingness to pay income zakat. Based on the mean ranking of individuals who pay zakat, the findings indicate that attitude, religious, and facility factors influence income zakat compliance behavior among them. This study closes by recommending that proper zakat education be provided for the Ummah to benefit from the great zakat system. Some Muslim university lecturers in Penang did not pay income zakat to Zakat Pulau Pinang because they believed they could do so at any zakat department in Malaysia. These challenges, among others, inspire this study to investigate the factors of income zakat compliance behavior among Muslim university teachers in Penang. This study aims to investigate the impact of attitude, religion, and facility on intention, as well as the impact of intention on compliance behavior of income zakat payment. This research will show that attitude, religiosity, and facility all have important links and beneficial influences on intention. Furthermore, this study confirms that purpose has a significant association with compliance behavior and a considerable and huge impact size. This study advises that Zakat Pulau Pinang organize, develop, and implement an effective intervention by presenting Muslims who have met the standards for paying income zakat with accurate and powerful new information that could influence their ideas about the effects of paying zakat.

Keywords: Zakat, attitude, religiosity, facility, behaviour, compliance behaviour.

Introduction

Zakat is an obligatory alms-giving for Muslims in Malaysia based on their income and wealth. It is one of Islam's Five Pillars and is overseen by several governmental Islamic religious authorities or organizations. In Malaysia, the particular standards and rates for Zakat vary widely between states, but the calculation is generally based on a percentage of an individual's or organization's income and assets. In Malaysia, Zakat income is computed using the notion of "nisab," which is the minimal level of wealth that renders an individual obligated to pay Zakat. The nisab value is set by the religious councils of each state and is often based on the value of silver or gold. The standard Zakat rate in Malaysia is 2.5% of an individual's or organization's qualified wealth or income. On the other hand, personal things, debts, and required living expenses are exempted or deducted from the computation. Remembering that the actual rules and regulations may differ slightly between states is crucial. Therefore, it is best to check the local Islamic religious authorities or scholars for the most accurate and up-to-date information on Zakat calculations in Malaysia.

Income Zakat is one of the emerging issues among Syariah scholars and they might have varying opinions regarding it. The issue regarding zakat collection in Malaysia is that zakat



collection remains low, even though the number of Muslims eligible to pay zakat increases yearly. It occurs as a result of zakat noncompliance. The uniformity of the legislation and fatwa on the requirement are not the sole determinants of zakat compliance behavior. In truth, zakat compliance behaviour is linked to faith, understanding, and obedience to God's directives (Ahmad & Wahid, 2013). This research is meant to contribute to the increase in zakat collection indirectly. Identifying the elements or determinants of paying zakat among zakat lectures may assist the zakat institution in adjusting its zakat awareness campaign. Research into the elements that influence zakat compliance behaviour is required for the best zakat collection in every scenario.

Thus, this study aims to investigate religiosity as a factor concentrating on employment income zakat. Research has looked into the function or effect of religiosity on several areas in predicting behaviour. The current study looks at religion as a factor determining zakat compliance behaviour, focusing on the Muslim population in Pulau Pinang's job income zakat. Information or statistics about zakat in Pulau Pinang must be discussed to advance the study. It is especially appropriate for usage in light of past research into the amount of compliance behaviour among professors who pay zakat income among lecturers in Pulau Pinang.

Another study found that the religious factor is particularly essential since it influences compliance behaviour and, through paying zakat, can minimise societal problems. The objective of the study is to examine the relationship between attitude, religiosity, and facilities with compliance behaviour of income zakat among lecturers in Penang.

This chapter seeks to conduct a critical review of the literature on the subject of this study. It will review the literature on the General Theory of Behaviour and the Theory of Planned Behaviour. It is hoped that the literature review will aid this study in clarifying the research problem, improving the research technique, broadening the research knowledge base, and contextualising the findings. The Theory of Planned Behavior will also be discussed in the study (TPB). It will discuss previous research on compliance behaviour, attitudes toward compliance behaviour, and religiosity toward compliance behaviour.

In summary, this study aims to look into attitude and Islamic religiosity as factors that may explain zakat compliance behaviour on income zakat among lecturers in Pulau Pinang. The current study will use questions from previous studies. The following section explains the study's framework.

Methodology

This study uses the Theories of Planned Behavior (TPB) by (Ajzen, 1991). Ajzen (1991) evaluated research on many aspects of the Theory of Planned Behavior (TPB). This investigation discovered that TPB research is validated by empirical evidence. Behavioural intents can be accurately predicted by attitudes toward the behaviour and perceived behavioural control (Ajzen, 1991). This study is regarded as a pioneer in compliance behaviour research. His TPB has been employed in various disciplines, including psychology, medicine, and social science. The TPB framework proposed by Ajzen (1991) will be tested in this thesis. Figure below:

Figure 1: Research Framework

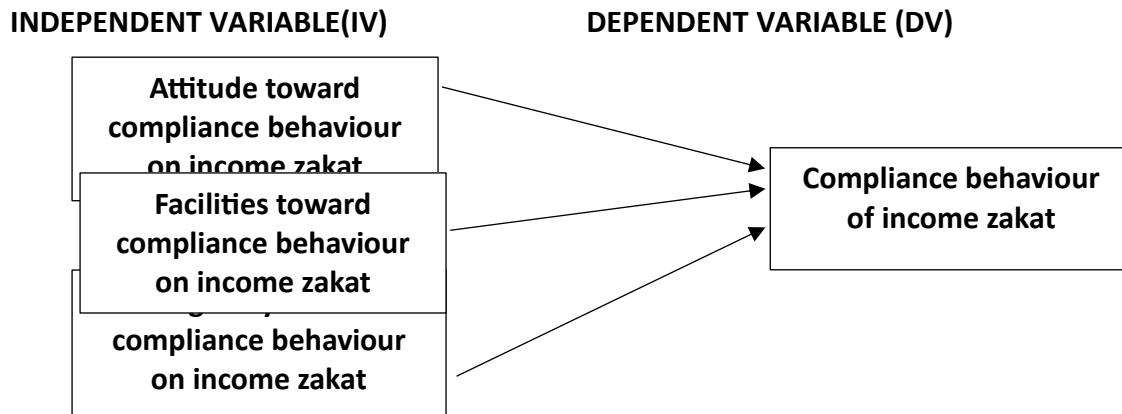


Figure 3.0 Theoretical Framework of the Study adapted and adopted from Ajzen (1991) with some modifications by the researcher.

Conclusion

This study uses an interview technique to describe zakat payment compliance behaviour further and generates a unique visual. Previously, the psychological model of planned action was used to examine the compliance behaviour of income, company, and zakat savings. According to the expected behaviour model, attitude and perceived control are distinct elements that determine intention, influencing compliant behaviour. It is critical to recognise zakat contributors since this study found that religion, arbitrary laws, and perceived behavioural control all influence compliance behaviour. The research can take the appropriate steps to increase the number of zakat givers. Zakat can significantly reduce poverty and bridge the gap between the wealthy and the poor in the Muslim Ummah as zakat donors increase. Even though there is a plethora of literature on zakat payment compliance, almost all of it adopts a quantitative approach. The outcomes of this study differ from those of previous research due to the definition of zakat payment compliance behaviour as an Islamic principle and the use of a different technique than the qualitative approach used in previous studies. According to the study, complete research on zakat compliance should be undertaken using the qualitative technique. Future researchers may use the diagram presented in this study as their theoretical framework.

Zakat income among professors is an important factor in Malaysia's conceptual framework of alms-giving. Lecturers are subject to Zakat calculations based on their salary and wealth as part of their Islamic responsibility. The imposition of Zakat assures the redistribution of wealth and promotes community-based social welfare activities.

Lecturers contribute to the advancement of society by providing financial support to those in need through the payment of Zakat. This income is critical in creating social fairness and alleviating poverty among needed. Furthermore, Zakat serves as a tool for purifying riches and instilling empathy and accountability in the academic community.



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Comparative Analysis of Artificial Intelligence (AI) Transformation In Islamic Financial Sector Products and its Implications on Economic Growth in Indonesia and Malaysia

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Abstract

This study examines the transformation of artificial intelligence (AI) in Islamic financial sector products in Indonesia and Malaysia, focusing on its adoption, regulatory frameworks, and economic impact. AI-driven innovations in Islamic banking, fintech, and takaful have enhanced financial inclusion, risk management, and operational efficiency, yet regulatory challenges persist, particularly in ensuring compliance with Shariah principles. Malaysia, with its structured regulatory framework under Bank Negara Malaysia (BNM), has facilitated AI-driven advancements, while Indonesia, governed by Otoritas Jasa Keuangan (OJK), faces infrastructural and regulatory hurdles in AI governance. Using a qualitative comparative analysis, this research reviews secondary data sources, including journal articles, regulatory reports, and industry case studies, to evaluate AI's impact on automation, financial inclusion, risk mitigation, and fraud prevention in both countries. Findings indicate that Malaysia's AI-driven regulatory sandbox fosters controlled experimentation, whereas Indonesia's evolving regulatory landscape presents scalability challenges. AI applications such as machine learning for credit scoring, robo-advisors in wealth management, AI-based underwriting in takaful, and peer-to-peer (P2P) financing for SMEs were analyzed to determine their role in financial accessibility and economic development. Despite AI's benefits, concerns regarding regulatory uncertainty, ethical considerations, and job displacement remain significant. The study recommends strengthening AI governance frameworks, encouraging cross-border regulatory collaboration, and exploring AI-driven Shariah-compliant smart contracts and blockchain integration. Future research should focus on AI's long-term implications on employment, financial stability, and technological advancements in the Islamic financial sector. By addressing regulatory and technological gaps, AI can accelerate the growth of Islamic finance while maintaining Shariah compliance and enhancing financial accessibility.

Keywords: Artificial Intelligence, Islamic Finance, Fintech, Malaysia, Indonesia

Background of the Study

The integration of Artificial Intelligence (AI) into the financial sector has significantly reshaped traditional banking and financial services. AI-driven technologies, including machine learning, natural language processing, and blockchain, are increasingly being used to enhance operational efficiency, strengthen risk management, and improve customer experience (Alareeni et al., 2022). Financial institutions are leveraging AI for automated credit scoring, fraud detection, and investment advisory services, enabling a more data-driven and responsive financial ecosystem. As digital transformation accelerates, AI is emerging as a key driver of innovation in the global financial landscape. In Islamic finance, AI presents new opportunities to enhance Shariah compliance, optimise investment strategies, and streamline regulatory oversight. The unique principles of Islamic finance—such as the



prohibition of *riba* (interest), *gharar* (excessive uncertainty), and *maysir* (gambling)—necessitate alternative financial mechanisms like profit-and-loss sharing and asset-backed transactions (Rahman et al., 2023). AI technologies can support these requirements by automating compliance checks, analysing contract structures, and verifying Shariah-compliant transactions in real time. Applications such as AI-powered robo-advisors, blockchain for smart contracts, and predictive analytics in *takaful* (Islamic insurance) highlight the growing role of AI in modernising Islamic financial services.

Indonesia and Malaysia are the two largest Islamic finance markets in Southeast Asia, with both countries actively integrating AI into their financial ecosystems. Malaysia, recognised as a global leader in Islamic finance, has taken significant steps in implementing AI across banking, *takaful*, and capital markets to drive financial inclusivity and digital transformation (Bank Negara Malaysia, 2023). The country has developed clear governance frameworks that allow financial institutions to adopt AI-driven solutions while ensuring ethical and Shariah compliance. Meanwhile, Indonesia, home to the world's largest Muslim population, is also adopting AI in fintech platforms, digital banking, and microfinance to expand financial inclusion (Otoritas Jasa Keuangan, 2023). However, challenges remain, particularly in addressing regulatory gaps, digital literacy concerns, and the need for a more robust AI infrastructure.

Despite these advancements, research on how AI transformation in Islamic financial products influences economic growth in Indonesia and Malaysia remains limited. While AI-driven innovations have improved efficiency and accessibility in the financial sector, their broader macroeconomic implications are still not well understood. Given the increasing digitalisation of Islamic finance, it is crucial to examine how AI is reshaping financial markets, influencing investment flows, and contributing to economic development in Southeast Asia.

Problem Statement

While AI adoption in conventional finance has been extensively studied, research on its implementation in Islamic finance remains relatively limited. AI has demonstrated its ability to enhance efficiency, mitigate risks, and support financial growth in conventional banking (Hasan et al., 2022), but applying AI within the constraints of Shariah law presents unique challenges. Islamic financial institutions must operate within strict ethical and legal frameworks that prohibit interest-bearing transactions, speculative activities, and investments in non-compliant sectors. These restrictions require AI solutions that are specifically designed to align with Shariah principles, making their development and implementation more complex. One of the key challenges in AI adoption within Islamic finance is ensuring Shariah compliance. AI-driven financial products—such as algorithmic trading, robo-advisors, and automated lending platforms—must be structured in a way that adheres to Islamic finance regulations. However, the absence of standardised regulatory frameworks for AI in Islamic finance makes this process even more complicated. While Malaysia has made progress in establishing AI governance policies and fintech regulations, Indonesia is still in the early stages of developing a structured approach to AI integration within its financial ecosystem (Ismail & Yusof, 2023). The lack of a harmonised AI regulatory framework in Indonesia raises concerns about the consistency, transparency, and reliability of AI-driven Islamic financial services.



Beyond regulatory challenges, there is also limited research on the broader economic impact of AI transformation in Islamic finance. While AI has the potential to drive financial inclusion and economic stability, its long-term effects on key economic indicators—such as GDP growth, employment, and financial accessibility—remain largely unexplored. A comparative analysis between Indonesia and Malaysia is essential to identify differences in AI adoption, regulatory approaches, and economic outcomes. Given Malaysia's established Islamic finance infrastructure and Indonesia's growing digital finance sector, understanding the factors that contribute to successful AI implementation will be valuable for policymakers, financial institutions, and industry stakeholders.

Research Objectives

This study aims to:

1. Examine the transformation of AI in Islamic financial sector products in Indonesia and Malaysia. This includes analyzing how AI is being applied in key areas such as Shariah compliance, financial efficiency, and customer engagement.
2. Compare the AI-driven innovations and regulatory approaches between the two countries. This will provide insights into how Malaysia and Indonesia are addressing AI adoption in Islamic finance and identify best practices for regulatory alignment.
3. Analyse the implications of AI transformation on economic growth in Indonesia and Malaysia. The study will assess the broader economic impact of AI-driven Islamic finance on financial stability, economic inclusivity, and growth trends.

Literature Review

Overview of the Islamic Financial Sector

Islamic finance operates under the principles of Shariah, which prohibit *riba* (interest), *gharar* (excessive uncertainty), and *maysir* (gambling). Instead, it promotes risk-sharing, ethical financial transactions, and socially responsible investment (Iqbal & Mirakhor, 2021). The sector has witnessed significant growth over the past two decades, with global Islamic financial assets exceeding USD 3 trillion by 2022 (Islamic Financial Services Board [IFSB], 2023). This expansion is driven by increasing demand for Shariah-compliant financial products, strong governmental support, and technological advancements that facilitate digital financial services.

Development of Islamic Finance

The Islamic financial system is based on profit-and-loss sharing mechanisms, ensuring that financial transactions are aligned with ethical and equitable principles. Islamic banking, *takaful* (Islamic insurance), and *sukuk* (Islamic bonds) are the key pillars of the industry. Unlike conventional finance, Islamic financial institutions must adhere to Shariah governance frameworks, requiring oversight from Shariah advisory boards to ensure compliance with Islamic principles (Dusuki & Bouheraoua, 2023). Over the years, the regulatory landscape has evolved to support the industry's growth. International organisations such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) and the Islamic Financial Services Board (IFSB) play a critical role in setting standards for Islamic financial institutions. These standards cover areas such as risk management, capital adequacy, and corporate governance, ensuring the stability and resilience of the industry (BNM, 2023).

The Role of Malaysia in Islamic Finance

Malaysia is widely recognised as a global leader in Islamic finance, owing to its proactive regulatory framework, institutional support, and innovation-friendly ecosystem. The country has established comprehensive Islamic finance regulations under Bank Negara Malaysia (BNM) and the Securities Commission Malaysia (SCM), which provide clear guidelines for Shariah-compliant financial services. The Malaysian government has also introduced policies to promote financial technology (fintech) in the Islamic finance sector, encouraging AI adoption in banking, takaful, and capital markets (BNM, 2023). Malaysia's Islamic finance market is well-developed, with institutions such as Maybank Islamic, CIMB Islamic, and Bank Islam leading AI-driven digital banking initiatives. Additionally, Malaysia has pioneered the issuance of sukuk (Islamic bonds), making it the largest sukuk market globally. The country has also established the Islamic Digital Economy (IDE) framework, aimed at integrating digital solutions, including AI, into Islamic financial services (Securities Commission Malaysia, 2023).

Islamic Finance in Indonesia: Growth and Challenges

Indonesia, home to the world's largest Muslim population, has experienced rapid growth in Islamic banking, microfinance, and fintech. The government, through Otoritas Jasa Keuangan (OJK) and Bank Indonesia (BI), has introduced policies to expand financial inclusion and promote Shariah-compliant financial services (OJK, 2023). Despite these efforts, Indonesia's Islamic finance sector is still developing compared to Malaysia. The country faces challenges such as limited awareness of Islamic finance, the dominance of conventional banking, and the need for more comprehensive regulatory frameworks. While Islamic banking assets in Indonesia have grown steadily, they still account for a smaller market share than conventional banking (BI, 2023). One of Indonesia's major advancements is the rise of Islamic fintech startups. Platforms such as Ammana, Alami, and Investree Syariah are leveraging AI to provide Shariah-compliant digital lending, investment, and payment services. These innovations have helped bridge the financial inclusion gap, particularly in rural areas where traditional banking services are limited (OJK, 2023).

Comparative Analysis of Islamic Finance in Malaysia and Indonesia

Table 2.1: Comparative Analysis of Islamic Finance in Malaysia and Indonesia

Aspect	Malaysia	Indonesia
Regulatory Framework	Established, proactive regulatory policies by BNM and SCM.	Developing framework under OJK and BI, still evolving.
Islamic Banking Market Share	Over 30% of total banking assets.	Around 7-10% of total banking assets.
Fintech Integration	Strong support for Islamic fintech, including AI-driven innovations.	Growing Islamic fintech sector but still in early stages.
Takaful (Islamic Insurance)	Mature takaful industry with AI adoption for risk management.	Emerging takaful market with potential for AI integration.
Sukuk Market	Largest global sukuk issuer.	Growing sukuk market, but still smaller than Malaysia.

Source: Asri, Siraj, Mighfari & Firli (2020)



While Malaysia has a more mature and structured Islamic finance industry, Indonesia is catching up, particularly in the fintech and microfinance sectors. AI has the potential to accelerate this growth by enhancing financial inclusion, streamlining regulatory compliance, and improving risk management strategies.

Artificial Intelligence (AI) in the Islamic Financial Sector

Artificial Intelligence (AI) has become a transformative force in the global financial sector, enhancing automation, decision-making, and customer experience. AI technologies, such as machine learning, natural language processing (NLP), and blockchain, are revolutionizing financial services by improving operational efficiency, risk assessment, and regulatory compliance (Alam et al., 2022). In the context of Islamic finance, AI presents new opportunities to enhance Shariah compliance, optimize investment strategies, and expand financial inclusion. However, its integration remains complex due to the unique governance principles of Islamic finance, which require ethical and transparent financial practices. This section explores the applications of AI in Islamic finance, its benefits, challenges, and the role of AI-driven innovations in reshaping the financial landscape in Malaysia and Indonesia.

Applications of AI in Islamic Finance

AI-driven technologies are increasingly being used across various segments of Islamic finance, from banking and insurance to capital markets and fintech. Some key applications include:

1. AI-Powered Robo-Advisory Services

Robo-advisors use AI algorithms to provide automated, data-driven investment advice tailored to individual financial goals. In Islamic finance, AI-powered robo-advisory services help ensure that investment portfolios comply with Shariah principles. By leveraging machine learning and big data analytics, these platforms can screen and filter out non-compliant stocks, bonds, and funds, ensuring that investments adhere to Islamic ethical guidelines (Rahim et al., 2023). For instance, Wahed Invest, a global Islamic robo-advisor, uses AI to offer Shariah-compliant investment solutions, ensuring that clients' portfolios exclude businesses involved in prohibited activities such as alcohol, gambling, and interest-based lending. Similarly, Malaysia's Finterra has developed AI-driven financial planning tools that cater to ethical investment preferences (Alam et al., 2022).

2. AI for Shariah Compliance and Regulatory Monitoring

One of the most critical challenges in Islamic finance is ensuring continuous compliance with Shariah principles. AI-powered compliance tools use NLP and machine learning to analyze contracts, financial statements, and transaction data to detect potential non-compliance issues. This automation reduces the reliance on manual Shariah audits and enhances the efficiency of regulatory monitoring (Hasan et al., 2022). For example, AI can automatically review loan agreements and financial transactions to verify that they do not involve *riba* (interest) or excessive uncertainty (*gharar*). AI-driven compliance platforms, such as Amanie Advisors' Shariah Screening Software, use AI to analyze financial instruments and ensure they adhere to Islamic finance regulations (Rahim et al., 2023).

3. AI in Islamic Banking and Digital Finance

Islamic banks are integrating AI into their operations to improve customer service, streamline risk assessment, and enhance fraud detection. AI chatbots, predictive analytics, and biometric authentication are being deployed to improve banking efficiency and security (Ismail & Yusof, 2023). In Malaysia, Maybank Islamic and CIMB Islamic have implemented AI-

driven chatbots to handle customer inquiries and transaction processing. Meanwhile, Indonesia's Bank Syariah Indonesia (BSI) has started using AI for customer profiling and fraud prevention. These advancements contribute to financial inclusion by enabling digital banking solutions for underserved populations.

4. AI in Takaful (Islamic Insurance) and Risk Management

AI is also transforming takaful, the Islamic equivalent of conventional insurance. AI-powered tools analyze customer data to assess risk, automate claim processing, and detect fraudulent activities. Predictive analytics help takaful providers price policies more accurately while ensuring that coverage aligns with Shariah principles (Aziz & Ibrahim, 2023). For example, Etiqa Takaful Malaysia utilizes AI to improve risk assessment models, while Indonesia's Prudential Syariah has adopted AI to enhance underwriting processes and claims management. AI-driven automation helps takaful providers reduce administrative costs and improve customer satisfaction (Suhartanto et al., 2021).

5. AI and Blockchain for Smart Contracts in Islamic Finance

The combination of AI and blockchain technology has significant potential for automating Shariah-compliant contracts. AI-driven smart contracts on blockchain networks can execute transactions automatically when predefined conditions are met, ensuring transparency and reducing disputes (Kamaruddin et al., 2023). For example, AI-powered blockchain solutions are being used in Islamic microfinance to facilitate transparent, interest-free lending. Startups such as Blossom Finance in Indonesia are leveraging AI and blockchain to enhance microfinancing for small businesses while maintaining compliance with Islamic finance principles (Qudah et al., 2023).

Benefits of AI Integration in Islamic Finance

The adoption of AI in Islamic finance brings numerous advantages, including:

- I. **Enhanced Efficiency:** AI automates repetitive tasks such as risk assessment, fraud detection, and compliance checks, reducing processing times and operational costs (Hasan et al., 2022).
- II. **Improved Financial Inclusion:** AI-driven digital banking and fintech solutions enable underserved populations to access Shariah-compliant financial services, particularly in rural areas (Aziz & Ibrahim, 2023).
- III. **Strengthened Risk Management:** Machine learning algorithms enhance fraud detection and predictive analytics, improving financial stability and consumer protection (Skibińska & Tayachi, 2024).
- IV. **Increased Transparency:** AI-powered blockchain applications provide immutable transaction records, reducing the risk of financial fraud and unethical practices (Qudah et al., 2023).
- V. **Personalized Financial Services:** AI-driven robo-advisors and chatbots offer tailored financial solutions based on individual customer preferences and risk tolerance (Qudah et al., 2023).

Challenges of AI Adoption in Islamic Finance

Despite its potential, AI adoption in Islamic finance faces several challenges:

- I. **Regulatory Uncertainty:** AI-driven financial products must comply with Shariah principles and financial regulations, but many jurisdictions lack clear AI governance frameworks.
- II. **Ethical Considerations:** AI decision-making raises ethical concerns, particularly in



- areas such as automated trading and credit scoring, which require human oversight.
- III. **Data Privacy and Security Risks:** AI systems rely on vast amounts of financial data, raising concerns about data security, privacy, and cyber threats.
 - IV. **Algorithmic Bias:** AI models may inadvertently introduce biases that could affect decision-making, particularly in credit risk assessment and fraud detection.
 - V. **Integration Costs:** Implementing AI requires significant investment in technology infrastructure, talent acquisition, and Shariah-compliant AI development.

The Role of AI in Islamic Fintech Development in Malaysia and Indonesia

Both Malaysia and Indonesia are actively integrating AI into their Islamic fintech ecosystems, but their approaches differ based on market maturity and regulatory readiness.

Table 2.2: AI Integration in Islamic Fintech – Malaysia vs. Indonesia

Aspect	Malaysia	Indonesia
Regulatory Framework	Comprehensive AI governance under Bank Negara Malaysia (BNM) and Securities Commission Malaysia (SCM).	AI regulations are still developing under Otoritas Jasa Keuangan (OJK) and Bank Indonesia (BI).
Islamic Fintech Growth	Advanced ecosystem with AI-driven banking, robo-advisors, and blockchain applications.	Growing fintech sector with AI-powered digital lending and microfinance solutions.
Takaful AI Integration	Well-established AI use in risk assessment, claims processing, and fraud detection.	Emerging takaful AI applications, with potential for expansion.
Blockchain & Smart Contracts	Strong integration with sukuk issuance and Islamic financial contracts.	Early adoption phase, with pilot projects in microfinance and halal investment.

Source: Asri et al (2020)

Future Prospects of AI in Islamic Finance

AI is expected to play an even greater role in the future of Islamic finance, particularly in:

- a) **AI-Enhanced Shariah Governance:** Automating compliance audits to ensure ongoing Shariah adherence.
- b) **Decentralized Islamic Finance:** Expanding AI-driven blockchain solutions for transparent and ethical financial services (Asri et al., 2020).
- c) **AI-Powered Sustainable Finance:** Integrating AI with Environmental, Social, and Governance (ESG) principles to align Islamic finance with ethical investment trends.

The successful adoption of AI in Islamic finance will require collaborative efforts between financial regulators, Shariah scholars, and technology experts to develop standardized AI governance frameworks. By addressing regulatory gaps and leveraging AI responsibly, Malaysia and Indonesia can further strengthen their positions as global leaders in Islamic finance innovation.



Transformation of AI in Islamic Financial Sector Products

The integration of AI in Islamic financial sector products has significantly transformed the way financial institutions operate, leading to increased efficiency, improved risk management, and enhanced financial inclusion. AI-powered solutions have been adopted in various areas of Islamic finance, including banking, fintech, takaful, and capital markets. These advancements have allowed financial service providers to offer innovative products that adhere to Shariah principles while leveraging cutting-edge technology to improve accessibility, transparency, and decision-making processes.

AI-Powered Islamic Banking

Islamic banks in Malaysia and Indonesia have increasingly incorporated AI-driven technologies to enhance their operational efficiency and customer experience. AI is being utilised in areas such as customer service, credit risk assessment, fraud detection, and compliance monitoring. One of the most notable applications of AI in Islamic banking is the deployment of AI-powered chatbots and virtual assistants. Banks such as Maybank Islamic in Malaysia and Bank Syariah Indonesia (BSI) have introduced AI-based chatbots to provide real-time assistance to customers, answering queries related to account management, Shariah-compliant financing, and investment opportunities (Ismail & Yusof, 2023). These AI-driven virtual assistants enhance customer engagement by providing 24/7 support, reducing reliance on human agents, and improving response times. AI is also revolutionising credit risk assessment in Islamic banking. Traditional credit scoring models often struggle to assess creditworthiness for customers who do not have conventional credit histories. AI-powered alternative credit scoring models leverage big data analytics, machine learning, and behavioural analysis to evaluate a borrower's financial stability while adhering to Islamic finance principles. By analysing transaction histories, spending patterns, and non-traditional data sources such as mobile phone usage and social media activity, AI enables Islamic banks to offer financing solutions to a broader customer base, including the unbanked and underbanked populations (Rahim et al., 2023). Additionally, AI-driven fraud detection systems have enhanced security in Islamic banking. These systems use real-time monitoring, anomaly detection, and pattern recognition to identify fraudulent transactions. Given that Islamic banking transactions often involve complex contracts such as Murabaha (cost-plus financing) and Ijarah (leasing), AI helps in verifying compliance by analysing transactional data and flagging any suspicious activities. This contributes to enhanced financial security and regulatory compliance in the Islamic banking sector (Hasan et al., 2022).

Shariah-Compliant Fintech and AI Innovations

The fintech sector has been at the forefront of AI adoption in Islamic finance, with AI-driven solutions playing a critical role in ensuring Shariah compliance and improving financial accessibility. One of the most significant applications of AI in Islamic fintech is automated Shariah screening. AI-powered screening tools use natural language processing (NLP) and machine learning algorithms to analyse financial contracts, investment portfolios, and corporate activities to determine whether they comply with Islamic finance principles. This is particularly important for Islamic investment funds and halal stock screening platforms, where AI helps investors identify Shariah-compliant securities more efficiently (Nawi et al., 2022). Islamic peer-to-peer (P2P) lending platforms have also benefited from AI-driven risk assessment models. These platforms use AI to match borrowers with lenders based on predefined risk profiles while ensuring compliance with Islamic finance principles, such as



profit-and-loss sharing arrangements. AI-powered contract analysis tools verify that financing agreements adhere to Shariah requirements, reducing the risk of non-compliance. In Indonesia, platforms like Ammana and Investree Syariah have integrated AI into their lending processes to enhance efficiency and transparency in Islamic crowdfunding and microfinance initiatives (Otoritas Jasa Keuangan, 2023).

Furthermore, AI-driven robo-advisory services have transformed Islamic wealth management. AI-based robo-advisors provide personalised investment recommendations that align with Islamic ethical guidelines, taking into account risk tolerance, financial goals, and market trends. These robo-advisors utilise AI-driven sentiment analysis and predictive analytics to suggest optimal Shariah-compliant investment strategies. Islamic fintech firms in Malaysia, such as Wahed Invest, have successfully integrated AI into their digital investment platforms, making Islamic wealth management more accessible to retail investors (Rahman et al., 2023).

AI in Takaful (Islamic Insurance) and Risk Management

AI has significantly impacted the takaful (Islamic insurance) sector by enhancing risk assessment, claims processing, and fraud detection. Takaful operators in Malaysia and Indonesia have started using AI-powered underwriting models to assess policyholder risk profiles more accurately. AI-driven models analyse large datasets, including medical records, lifestyle factors, and historical claims data, to provide more precise risk evaluations. This enables takaful providers to offer personalised insurance coverage while maintaining the principles of mutual cooperation and risk-sharing (Aziz & Ibrahim, 2023). Another key transformation in takaful is the use of AI for automated claims processing. AI-powered claims management systems leverage computer vision and machine learning to process claims more efficiently by analysing documents, verifying policy details, and detecting anomalies. This reduces claim processing times and minimises fraudulent claims. AI-driven chatbots and virtual assistants also assist policyholders by providing instant updates on claim statuses and guiding them through the claim's submission process. Fraud detection in takaful has also improved with the integration of AI. AI models identify suspicious patterns in claims data, flagging potentially fraudulent activities before payments are disbursed. By detecting inconsistencies and analysing claimant behaviour, AI helps takaful providers mitigate fraudulent claims, ultimately reducing operational costs and ensuring fairness in the takaful system (Kamaruddin et al., 2023).

AI, Blockchain, and Smart Contracts in Islamic Finance

The integration of AI and blockchain technology has further enhanced transparency, efficiency, and security in Islamic financial transactions. Blockchain technology, with its decentralised and immutable ledger system, aligns well with Islamic finance principles, as it promotes trust, traceability, and transparency. AI-driven smart contracts have been developed to automate and enforce Islamic financial contracts, ensuring that all contractual terms comply with Shariah guidelines. Smart contracts powered by AI enable self-executing agreements that automatically process payments, verify compliance, and trigger contract enforcement based on predefined conditions. This is particularly useful for Islamic banking contracts such as Musharakah (joint venture financing) and Sukuk (Islamic bonds), where AI ensures that profit-sharing and revenue distribution are executed accurately and fairly (Hasan et al., 2022). Blockchain and AI have also facilitated the development of decentralised



Islamic finance (DeFi) solutions. AI-powered DeFi platforms use blockchain-based verification systems to provide Shariah-compliant lending, investment, and remittance services. These platforms reduce reliance on intermediaries, lower transaction costs, and improve financial inclusion, particularly for unbanked populations in Indonesia and Malaysia (Ismail & Yusof, 2023).

Challenges and Future Prospects

Despite the transformative impact of AI in Islamic financial sector products, several challenges remain. Regulatory uncertainty is one of the key obstacles, particularly in Indonesia, where AI governance frameworks for Islamic finance are still developing. Ensuring Shariah compliance in AI-driven financial products also requires human oversight from Shariah scholars, as AI systems may not fully understand the nuances of Islamic jurisprudence (Rahim et al., 2023). Another challenge is the ethical and transparency concerns surrounding AI algorithms. Given the black-box nature of AI decision-making, financial institutions must ensure that AI-driven models are interpretable, unbiased, and aligned with Islamic ethical values. Additionally, the adoption of AI in Islamic finance requires significant investment in digital infrastructure, talent development, and regulatory alignment. Looking ahead, the future of AI in Islamic finance appears promising, with advancements in AI ethics, regulatory harmonisation, and AI-driven sustainability initiatives expected to shape the sector. AI has the potential to drive greater financial inclusion, improve efficiency, and foster economic growth in the Islamic financial industry. As Malaysia and Indonesia continue to embrace AI transformation, collaboration between regulators, financial institutions, and technology providers will be crucial in ensuring that AI-driven Islamic financial products remain ethical, compliant, and impactful.

Implications of AI on Economic Growth

The adoption of AI in financial services has far-reaching implications for economic growth, particularly in the context of Islamic finance. AI-driven innovations enhance financial efficiency, expand financial inclusion, and improve decision-making processes, all of which contribute to economic development. In Islamic finance, AI plays a critical role in promoting Shariah-compliant financial practices while increasing accessibility to financial services, particularly in emerging economies like Indonesia and Malaysia. However, while AI-driven transformation in Islamic finance offers numerous benefits, it also presents challenges related to job displacement, regulatory adaptation, and ethical considerations.

Enhancing Financial Inclusion and Economic Participation

One of the most significant ways AI contributes to economic growth in Islamic finance is by improving financial inclusion. Financial inclusion refers to the ability of individuals and businesses to access affordable financial services, including banking, credit, insurance, and investment opportunities. In many Muslim-majority countries, a large segment of the population remains unbanked or underbanked due to religious concerns about conventional banking practices. AI-driven fintech solutions, such as robo-advisors, AI-powered credit scoring models, and blockchain-based financial platforms, have made it easier for individuals to access Shariah-compliant financial services (Rahman et al., 2023). For example, AI-based alternative credit scoring models have enabled Islamic banks to assess the creditworthiness of individuals who lack traditional credit histories. By analysing non-traditional data sources such as mobile phone usage, e-commerce activity, and social media behavior, AI allows



financial institutions to offer microfinance solutions and small-business loans to underserved populations. This has been particularly impactful in Indonesia, where AI-driven Islamic fintech platforms like Ammana and Investree Syariah have facilitated financing for small and medium-sized enterprises (SMEs) that adhere to Islamic financial principles (Otoritas Jasa Keuangan, 2023).

Malaysia has also witnessed significant advancements in AI-driven financial inclusion. The country's strong fintech ecosystem has enabled Islamic banks and digital financial platforms to leverage AI for personalised financial services, making it easier for individuals to access financing, investment products, and takaful (Islamic insurance) solutions. By expanding access to financial services, AI has contributed to economic empowerment, particularly among low-income populations and small businesses, thereby fostering inclusive economic growth (Bank Negara Malaysia, 2023).

Increasing Efficiency and Reducing Transaction Costs

AI significantly enhances efficiency in the financial sector by automating processes, reducing manual interventions, and improving risk assessment. In Islamic finance, where transactions often involve complex contracts such as Murabaha (cost-plus financing) and Ijarah (leasing), AI-powered automation helps streamline financial operations, reducing administrative costs and improving transaction speed (Hasan et al., 2022). For instance, AI-driven fraud detection and risk management systems in Islamic banking have reduced operational risks by identifying fraudulent transactions in real-time. AI's ability to process large volumes of data quickly allows financial institutions to detect irregularities and prevent financial crimes, thereby improving overall financial stability. Additionally, AI-powered chatbots and virtual assistants have reduced the reliance on human customer service agents, lowering operational costs while enhancing customer engagement and satisfaction (Ismail & Yusof, 2023). Blockchain-based smart contracts, integrated with AI, have further reduced transaction costs by automating contract execution and eliminating intermediaries. In Islamic finance, smart contracts are particularly useful in Sukuk (Islamic bonds) issuance, ensuring compliance with Shariah principles while improving efficiency and transparency. By reducing reliance on intermediaries and minimising processing delays, AI and blockchain together contribute to cost reductions, benefiting both financial institutions and consumers (Kamaruddin et al., 2023).

AI's Role in Economic Productivity and Job Market Transformation

AI's ability to improve financial decision-making has direct implications for economic productivity. By leveraging AI-driven predictive analytics, Islamic financial institutions can make more informed investment decisions, optimise asset allocation, and mitigate risks. AI-powered market analysis tools help investors identify Shariah-compliant investment opportunities, leading to increased capital flow into ethical and sustainable businesses (Rahim et al., 2023). Moreover, AI's automation capabilities have transformed workforce dynamics in the financial sector. While AI enhances productivity by handling repetitive and data-intensive tasks, concerns have been raised about potential job displacement. In Islamic finance, where human oversight is crucial for ensuring Shariah compliance, AI cannot entirely replace Shariah scholars and financial advisors. However, it does shift job roles, requiring financial professionals to develop AI-related skills to remain relevant in the industry (Nawi et al., 2022). The emergence of AI-driven financial technology has created new job



opportunities in AI development, data science, and regulatory compliance. In Malaysia, the government has introduced initiatives to upskill financial professionals and equip them with AI expertise, ensuring a smooth transition to AI-powered financial services (Bank Negara Malaysia, 2023). Similarly, Indonesia is investing in AI talent development programs to bridge the skills gap and prepare its workforce for the digital transformation of Islamic finance (Otoritas Jasa Keuangan, 2023).

AI's Impact on Economic Stability and Regulatory Challenges

AI-driven advancements in Islamic finance have improved financial stability by enhancing risk management and fraud detection. AI-powered risk assessment models help Islamic banks and takaful operators predict financial risks more accurately, reducing the likelihood of financial crises. AI-driven stress testing and scenario analysis enable financial institutions to assess their resilience to economic fluctuations, ensuring long-term financial stability (Hasan et al., 2022). However, the widespread adoption of AI in Islamic finance also raises regulatory and ethical challenges. AI's reliance on big data and algorithmic decision-making raises concerns about data privacy, algorithmic bias, and regulatory oversight. In Indonesia, where AI regulations are still evolving, there is a need for a comprehensive legal framework to govern AI-driven financial services and ensure that AI applications align with Islamic ethical values (Otoritas Jasa Keuangan, 2023). Malaysia, on the other hand, has taken a proactive approach by introducing AI governance frameworks that address transparency, fairness, and accountability in AI-driven Islamic financial products. Bank Negara Malaysia (BNM) has established guidelines for responsible AI adoption, ensuring that AI applications in Islamic finance uphold ethical standards and do not compromise consumer rights (Bank Negara Malaysia, 2023). Regulatory harmonisation between Malaysia and Indonesia could facilitate a more consistent AI adoption strategy in Southeast Asia, fostering cross-border investment and economic cooperation.

The Long-Term Economic Impact of AI in Islamic Finance

Looking ahead, AI's continued integration into Islamic finance is expected to contribute to long-term economic growth by promoting innovation, improving financial resilience, and expanding global market access. AI-driven financial services enable businesses to scale operations more efficiently, attracting international investors interested in Shariah-compliant finance. The expansion of AI-powered Islamic fintech solutions could position Malaysia and Indonesia as global leaders in Islamic digital finance, boosting their economic competitiveness in the international financial market (Rahman et al., 2023). Furthermore, AI's potential in sustainable and ethical finance aligns with the broader economic goals of Islamic finance. AI-driven environmental, social, and governance (ESG) analysis tools help Islamic financial institutions assess the sustainability impact of their investments, promoting ethical and socially responsible finance. By integrating AI into ESG and Islamic finance, Malaysia and Indonesia can drive sustainable economic growth while maintaining adherence to Islamic ethical principles (Ismail & Yusof, 2023). However, to fully realise the economic benefits of AI, both countries must address existing challenges related to AI regulation, workforce adaptation, and technological infrastructure. Investment in AI research, regulatory reforms, and AI literacy programs will be crucial in ensuring that AI-driven Islamic finance contributes positively to economic growth without exacerbating social and economic inequalities.



Comparative Analysis of AI Transformation in Islamic Financial Sector Products in Indonesia and Malaysia

The adoption of AI in the Islamic financial sectors of Indonesia and Malaysia has progressed at different paces due to variations in regulatory frameworks, technological infrastructure, financial inclusion levels, and market maturity. While both countries recognise the potential of AI to enhance financial services, their approaches to AI implementation in Islamic finance differ significantly. This section provides a comparative analysis of AI transformation in the Islamic financial sectors of Indonesia and Malaysia, focusing on key areas such as regulatory environment, market development, financial inclusion, technological infrastructure, and AI-driven innovations.

Regulatory Environment for AI in Islamic Finance

A well-defined regulatory framework is crucial for the successful implementation of AI in financial services, particularly in Islamic finance, where compliance with Shariah principles is essential. Malaysia has been a global leader in Islamic finance regulation, having established comprehensive guidelines for AI-driven financial services, fintech, and digital banking under the supervision of Bank Negara Malaysia (BNM) and the Securities Commission Malaysia (SCM) (Bank Negara Malaysia, 2023). The country has introduced AI governance frameworks that ensure financial institutions adopt AI responsibly, with a strong emphasis on ethics, transparency, and consumer protection. In contrast, Indonesia is still in the process of developing a robust regulatory framework for AI in Islamic finance. The Otoritas Jasa Keuangan (OJK), Indonesia's financial services authority, has issued guidelines for fintech and Islamic finance, but specific regulations for AI governance remain limited (Otoritas Jasa Keuangan, 2023). Unlike Malaysia, Indonesia lacks a centralised AI policy that governs AI ethics, data protection, and Shariah compliance in financial services. This regulatory gap creates challenges for Islamic financial institutions in Indonesia, as they must navigate AI adoption without a clear compliance framework. Despite these differences, Indonesia has made progress in establishing Shariah-compliant fintech regulations, particularly for peer-to-peer (P2P) lending platforms, AI-based microfinance, and digital banking. However, regulatory inconsistencies remain a concern, as different regulatory bodies oversee various aspects of AI-driven financial services, leading to potential compliance ambiguities (Rahman et al., 2023).

Market Maturity and AI Adoption in Islamic Finance

Malaysia has a more mature Islamic finance market, with a strong institutional framework, well-established Islamic banks, and advanced fintech solutions. The country has successfully integrated AI into various Islamic financial products, including AI-driven robo-advisory services, smart contract-based Sukuk issuance, and AI-powered credit risk assessment (Ismail & Yusof, 2023). Malaysia's early adoption of AI in Islamic finance has positioned it as a leader in digital Islamic banking, attracting both local and international investors (Asri et al., 2020). On the other hand, Indonesia's Islamic finance sector is still in its growth phase, with a large portion of the market dominated by conventional banking institutions that offer Islamic financial services rather than dedicated Islamic banks. Although Indonesia has the largest Muslim population in the world, its Islamic finance sector lags behind Malaysia in terms of AI-driven innovations and product sophistication (Hasan et al., 2022). However, Indonesia has experienced rapid growth in Islamic fintech, particularly in P2P lending, digital payment platforms, and AI-powered credit scoring models. Malaysia's Islamic financial



institutions have been more proactive in adopting AI, partly due to government support and well-established AI policies. In contrast, Indonesia relies more on emerging Islamic fintech startups to drive AI innovation, which has led to fragmented AI adoption patterns across the financial sector. While some Indonesian Islamic banks have adopted AI for customer service automation and fraud detection, the implementation of AI in investment advisory services and smart contract automation remains limited compared to Malaysia (Otoritas Jasa Keuangan, 2023).

AI and Financial Inclusion in Islamic Finance

Both Malaysia and Indonesia recognise the potential of AI to enhance financial inclusion, particularly for underserved populations that seek Shariah-compliant financial services. However, Indonesia faces greater financial inclusion challenges due to its large rural population, lower digital literacy rates, and limited banking infrastructure. AI-driven fintech solutions have been instrumental in addressing these challenges, enabling alternative credit scoring models, mobile banking solutions, and AI-powered microfinance platforms to reach previously unbanked populations (Rahim et al., 2023). In Malaysia, AI has been used to enhance financial inclusion primarily through AI-driven digital banking platforms, automated Islamic investment services, and takaful (Islamic insurance) innovations. Malaysian Islamic banks leverage AI for hyper-personalised financial products, ensuring that banking services are tailored to the unique needs of different consumer segments (Bank Negara Malaysia, 2023). Indonesia's AI-driven financial inclusion efforts are more grassroots-driven, with fintech startups like Ammana and ALAMI using AI to assess credit risk for small businesses and improve access to Shariah-compliant financing. The use of AI chatbots and virtual assistants in both countries has also played a role in bridging the financial literacy gap, particularly among individuals unfamiliar with Islamic financial products (Otoritas Jasa Keuangan, 2023).

Technological Infrastructure and AI Capabilities

Malaysia has a more advanced AI and fintech ecosystem compared to Indonesia, supported by government initiatives, AI research centers, and collaborations between financial institutions and AI startups. The Malaysia Digital Economy Corporation (MDEC) has been instrumental in fostering AI-driven innovation in Islamic finance, promoting the integration of machine learning, big data analytics, and blockchain into the financial sector (Ismail & Yusof, 2023). Indonesia, while making progress, faces challenges in AI infrastructure development due to inconsistent internet access in remote areas, limited investment in AI research, and a shortage of AI-skilled professionals (Hasan et al., 2022). However, the Indonesian government has recognised the importance of AI and has launched the National AI Strategy (Stranas KA) to accelerate AI adoption across industries, including Islamic finance (Otoritas Jasa Keuangan, 2023).



Key AI Innovations in Islamic Financial Products

Table 2.3: Key AI Innovations in Islamic Financial Products

AI Application	Malaysia	Indonesia
AI-Powered Islamic Robo-Advisors	Widely adopted by Islamic banks for investment recommendations	Emerging, primarily in fintech startups
AI-Based Credit Risk Assessment	Advanced AI models integrated into Islamic banking systems	Used mainly in P2P lending and microfinance platforms
AI-Driven Shariah Compliance Screening	Automated screening of investment portfolios and Sukuk structures	Limited, with reliance on manual Shariah scholars
Blockchain and Smart Contracts	Integrated into Sukuk issuance and trade finance	Early-stage adoption, mostly in pilot projects
AI-Powered Takaful (Islamic Insurance)	AI-based underwriting and fraud detection widely used	Limited AI adoption in the takaful sector
AI-Enhanced Financial Inclusion	AI-driven digital banking and microfinance initiatives	AI used for alternative credit scoring in rural areas

Source: Asri et al (2020)

Theoretical and Conceptual Framework

This study is grounded in Institutional Theory (DiMaggio & Powell, 1983), which explains how organizations, including Islamic banks, fintech firms, and takaful providers, operate within structured regulatory environments that influence their adoption of Artificial Intelligence (AI). The integration of AI into Islamic financial products in Malaysia and Indonesia is not merely a technological shift but also a response to regulatory pressures, industry norms, and economic incentives. Institutional structures, including regulatory policies, Shariah compliance requirements, and digital infrastructure, shape the way AI is adopted, implemented, and scaled in the Islamic financial sectors of both countries.

Theoretical Framework: Institutional Theory

Institutional Theory suggests that organizations adopt new technologies based on pressures from regulatory bodies, industry norms, and market competitiveness. In the context of AI transformation in Islamic finance, financial institutions in Malaysia and Indonesia must navigate governance frameworks, Shariah compliance, and digital transformation strategies. The regulatory environment in each country determines the extent to which AI innovations are integrated into Islamic financial products such as banking, fintech, takaful, and capital markets. Institutional Theory provides a useful lens to understand how different regulatory and market structures influence AI adoption, shaping the financial ecosystem and its economic impact.

Institutional Theory highlights three types of pressures that drive AI adoption in Islamic finance: coercive, normative, and mimetic pressures. Coercive pressures arise from regulatory and compliance requirements, where financial institutions must adhere to national laws, financial regulations, and Shariah governance frameworks before implementing AI-driven solutions. In Malaysia, Bank Negara Malaysia (BNM) and the Securities Commission Malaysia (SCM) have developed AI regulatory frameworks, including an AI regulatory sandbox that allows financial institutions to experiment with AI-driven



solutions within controlled environments. This structured regulatory approach facilitates AI adoption while ensuring Shariah compliance and financial stability. In contrast, Indonesia's Otoritas Jasa Keuangan (OJK) lacks a unified AI policy for Islamic finance, resulting in uncertainty and slower adoption of AI technologies. The absence of a well-defined AI governance framework poses challenges for Islamic banks and fintech firms in Indonesia, as they must navigate multiple regulatory bodies and adapt AI strategies to an evolving policy landscape (Suhartanto et al., 2021).

Normative pressures refer to industry best practices, Shariah compliance, and professional expectations within the Islamic financial sector. The adoption of AI in Islamic finance follows global Shariah governance standards established by organizations such as the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) and the Islamic Financial Services Board (IFSB). Malaysia has taken the lead in AI-driven fintech innovations, including AI-powered robo-advisors, automated Shariah screening for investments, and AI-based fraud detection in takaful. These AI applications align with established industry practices and reinforce Malaysia's position as a global hub for Islamic finance. In Indonesia, AI-driven Islamic finance is emerging, with fintech firms experimenting with AI-powered alternative credit scoring and peer-to-peer (P2P) financing. However, due to limited regulatory standardization, the adoption of AI-driven solutions remains fragmented across different financial institutions (Hamadou et al., 2024).

Mimetic pressures drive organizations to adopt AI-driven solutions as a competitive necessity. Islamic financial institutions in both Malaysia and Indonesia recognize the potential of AI to enhance operational efficiency, expand financial inclusion, and improve customer engagement. In Malaysia, major Islamic banks such as Maybank Islamic and CIMB Islamic have invested in AI technologies to streamline banking operations, automate risk assessment, and optimize customer interactions. Similarly, Indonesia's Islamic fintech firms, including ALAMI and Investree Syariah, are integrating AI-driven credit scoring models to improve financial inclusion and facilitate SME financing. However, while Malaysian banks benefit from structured AI governance, Indonesian firms must navigate regulatory uncertainties, affecting the scalability of AI-driven financial products. By applying Institutional Theory, this study explains why Malaysia leads in AI-driven Islamic finance while Indonesia faces regulatory and infrastructural challenges. The differences in institutional structures shape AI's role in enhancing financial inclusion, operational efficiency, and economic growth in both countries. This theoretical framework provides a foundation for understanding the broader implications of AI adoption in Islamic finance and its potential to contribute to economic development.

Conceptual Framework

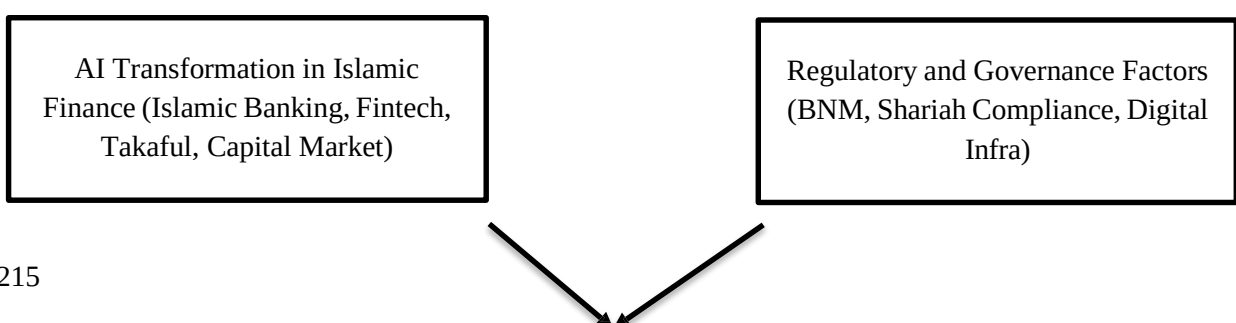
The conceptual framework of this study is adapted from Hasan et al. (2022), who examined the role of AI in Islamic banking, fintech, and takaful and its implications for financial inclusion, operational efficiency, and economic growth. This framework illustrates how AI transformation in Islamic finance is influenced by regulatory environments, financial institutions, and economic outcomes, particularly in the comparative context of Malaysia and Indonesia. The model integrates AI adoption as the independent variable, regulatory and governance factors as moderating variables, financial inclusion and operational efficiency as mediating variables, and economic growth as the dependent variable. AI-driven innovations



in Islamic banking, fintech, takaful, and capital markets serve as the foundation of digital transformation, improving financial accessibility, risk management, and operational efficiency. However, the effectiveness of AI implementation is largely shaped by regulatory and governance factors, which act as a moderating variable in this study.

The regulatory environment plays a crucial role in determining AI adoption in Islamic finance and differs significantly between Malaysia and Indonesia. Malaysia's regulatory bodies, including Bank Negara Malaysia (BNM) and the Securities Commission Malaysia (SCM), have established structured AI governance frameworks, allowing financial institutions to integrate AI within a controlled environment while ensuring compliance with Shariah principles. Conversely, Indonesia's regulatory landscape, governed by Otoritas Jasa Keuangan (OJK) and Bank Indonesia (BI), lacks a unified AI framework, creating uncertainty and slowing AI adoption in its Islamic finance sector. The level of regulatory clarity directly influences how Islamic banks, fintech firms, and takaful providers integrate AI-driven solutions into their financial services. Beyond regulatory influences, this study also examines mediating variables that shape AI's impact on financial services. One key mediating factor is financial inclusion and SME development, as AI-driven fintech solutions provide alternative financing options to underserved populations. In Malaysia, fintech firms such as Ethis and Wahed Invest use AI-powered investment screening to offer ethical, Shariah-compliant financing options, expanding financial access for both retail investors and SMEs. In Indonesia, AI-based credit scoring models are used by platforms such as ALAMI and Investree Syariah to assess the creditworthiness of SMEs without relying on conventional credit histories. These AI innovations enhance financial accessibility and reduce barriers to entry in the Islamic financial sector.

Another essential mediating factor is operational efficiency and cost reduction, as AI-driven automation enhances transaction efficiency, compliance monitoring, and fraud detection. In Islamic banking, AI-powered chatbots and virtual assistants streamline customer service, while predictive analytics improve investment decision-making in Shariah-compliant asset management. In takaful (Islamic insurance), AI-based underwriting models improve risk assessment, enabling better pricing and faster claims processing. The extent to which AI enhances financial operations depends on the regulatory environment, digital infrastructure, and industry-wide adoption of AI best practices. The final outcome of AI transformation in Islamic finance is its impact on economic growth in Malaysia and Indonesia. AI-driven innovations contribute to GDP growth by expanding financial inclusion, increasing access to Islamic financial products, and attracting Shariah-compliant investments. Malaysia, with its well-developed AI ecosystem in Islamic finance, is experiencing higher levels of digital transformation, leading to increased financial sector activity. In Indonesia, although AI adoption in Islamic finance is growing, regulatory and infrastructural challenges must be addressed to unlock AI's full potential in driving economic development.



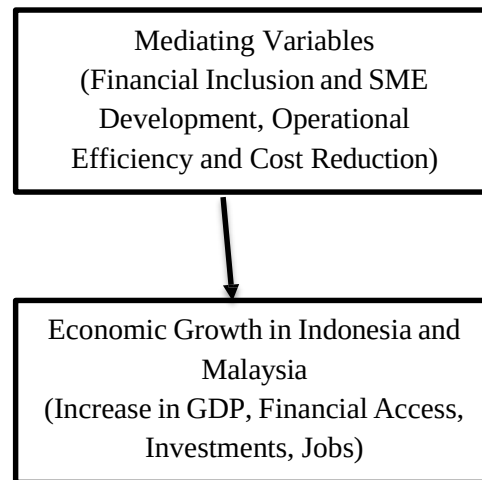


Figure 2.1: Conceptual Framework

Source: Hasan et al. (2022)

Methodology

This chapter outlines the research methodology employed in this study, including the research design, data collection methods, data analysis techniques, and sampling approach. Given the focus on AI transformation in Islamic financial sector products in Indonesia and Malaysia, a comparative research design is adopted to examine differences and similarities in AI implementation and its implications for economic growth.

Research Design

This study adopts a comparative qualitative research design to analyse AI transformation in the Islamic financial sectors of Indonesia and Malaysia. A qualitative approach is suitable for understanding regulatory frameworks, AI-driven innovations, and economic implications. The study also incorporates secondary data from government reports, financial institutions, and academic literature to support the analysis. A case study approach is used to explore AI implementation in selected financial institutions within Indonesia and Malaysia. Case studies allow an in-depth examination of how AI is transforming Islamic financial products and the regulatory challenges involved (Yin, 2023).

Data Collection Methods

The study relies on secondary data sources to provide a comprehensive analysis of AI adoption in Islamic finance. The key sources include:

- i. Government and regulatory reports – Documents from Bank Negara Malaysia (BNM), Otoritas Jasa Keuangan (OJK), and the Islamic Financial Services Board (IFSB) are reviewed to understand AI-related policies and regulations.
- ii. Academic journals and industry reports – Research papers published in Scopus and Web of Science-indexed journals provide insights into AI innovations in Islamic finance.
- iii. Annual reports of Islamic financial institutions – Reports from leading Islamic banks and fintech companies in Indonesia and Malaysia highlight AI-driven product developments.



- iv. Conference proceedings and white papers – Publications from Islamic finance and fintech conferences contribute to understanding industry trends and challenges.

Data Analysis Methods

A thematic analysis is used to identify key patterns and trends in AI transformation within Islamic finance. Thematic analysis involves coding qualitative data from multiple sources to categorise information into relevant themes (Braun & Clarke, 2023). To compare AI adoption in Indonesia and Malaysia, a comparative framework is developed based on:

1. Regulatory approaches – Differences in AI governance in Islamic finance.
2. Technological advancements – Levels of AI integration in Islamic banking, takaful, and fintech.
3. Economic implications – Impact on financial inclusion, productivity, and GDP growth.

Sampling Technique

This study uses purposive sampling to select financial institutions and regulatory bodies for case study analysis. The sample includes:

- i. Malaysia – Selected Islamic banks (e.g., Maybank Islamic, Bank Islam Malaysia), fintech firms (e.g., Ethis, Wahed Invest), and regulatory bodies (BNM, IFSB).
- ii. Indonesia – Selected Islamic banks (e.g., Bank Syariah Indonesia, BTPN Syariah), fintech platforms (e.g., ALAMI, Investree), and regulatory agencies (OJK, Bank Indonesia).

The selection is based on institutions' involvement in AI transformation and their impact on the Islamic financial sector.

Results

This chapter presents the findings of the study, focusing on the transformation of AI in Islamic financial sector products in Indonesia and Malaysia. The results are organized into key themes identified through thematic analysis, with each theme discussed in detail and supported by relevant data.

AI Integration in Islamic Banking

The integration of Artificial Intelligence (AI) in Islamic banking has been a significant development in both Malaysia and Indonesia, aiming to enhance customer experience, improve risk management, and increase operational efficiency.

Malaysia: In Malaysia, Islamic banks have been proactive in adopting AI technologies. For instance, Bank Muamalat Malaysia Berhad has embarked on a multi-year collaboration with Google Cloud to accelerate its transformation into a leading digital Islamic bank. This collaboration aims to leverage Google Cloud's integrated capabilities in modern infrastructure, data analytics, security, and generative AI to deliver personalized and inclusive digital banking services to Malaysians (Bank Muamalat leverages Google Cloud for personalised Islamic banking, 2024). Similarly, other major Islamic banks in Malaysia have integrated AI-powered chatbots and predictive analytics for customer engagement and credit risk assessment. AI-driven automation has enhanced operational efficiency and fraud detection, contributing to the overall growth of the Islamic banking sector in the country



(The Future Of Islamic Banking With AI, 2024).

Indonesia: In Indonesia, the adoption of AI in Islamic banking is also gaining momentum. Bank Syariah Indonesia (BSI), which holds over 50% of the Indonesian Islamic bank market, has been exploring AI applications to improve its services. A case study on BSI indicates that the bank is utilizing AI to enhance customer service and streamline operations (Unleashing the power of artificial intelligence in Islamic banking: A case study of Bank Syariah Indonesia, 2024). However, the implementation of AI in Indonesian Islamic banking is still in its early stages compared to Malaysia. Challenges such as regulatory constraints and infrastructural limitations have slowed the pace of AI integration. Nevertheless, the potential for AI to transform Islamic banking in Indonesia remains significant, with ongoing efforts to overcome these hurdles (Malaysia and Indonesia Leading the Charge for Asia's Islamic Banking Revolution, 2024).

Comparative Analysis

While both Malaysia and Indonesia are making strides in integrating AI into Islamic banking, Malaysia appears to be ahead in terms of implementation and innovation. The proactive approach of Malaysian banks, supported by collaborations with global tech companies, has facilitated a more rapid adoption of AI technologies. In contrast, Indonesian banks are still navigating initial challenges but are showing a growing interest in leveraging AI to enhance their services.

AI-Driven Innovations in Islamic Fintech

The fintech landscape in both Malaysia and Indonesia has witnessed significant AI-driven innovations, particularly in the realm of Islamic finance. These innovations aim to provide Shariah-compliant financial solutions that are efficient, accessible, and tailored to the needs of the Muslim population.

Malaysia: Malaysia has emerged as a leader in the Islamic fintech space, with numerous startups leveraging AI to offer innovative financial products. For instance, Ethis, a Malaysian-based crowdfunding platform, utilizes AI to match investors with Shariah-compliant investment opportunities, optimizing funding processes and enhancing decision-making (Islamic Fintech's Rise in South East Asia, 2022). Additionally, the rise of Islamic neo-banks in Malaysia, which offer Shariah-compliant financial services entirely online, is a testament to the country's commitment to integrating AI in fintech. These digital banks employ AI to personalize banking experiences, manage risks, and ensure compliance with Islamic principles (Top 7 Ways AI is Transforming the Islamic Finance Industry, 2024).

Indonesia: Indonesia's Islamic fintech sector is also experiencing growth, with startups harnessing AI to drive financial inclusion. Platforms like ALAMI and Investree utilize AI for credit scoring, enabling them to provide Shariah-compliant financing solutions to small and medium-sized enterprises (SMEs) that may lack traditional credit histories (How Indonesia is Powering the Islamic Finance Revolution, 2025). Moreover, Indonesian Islamic fintech startups are exploring AI applications in areas such as interest-free financing and ethical investment platforms, aiming to cater to the unique needs of the Muslim population (How Indonesia is Powering the Islamic Finance Revolution, 2025).



Comparative Analysis

While both countries are leveraging AI to advance Islamic fintech, Malaysia has a more established ecosystem, supported by government initiatives and a robust regulatory framework. Indonesia, with its larger Muslim population, presents significant potential for growth in Islamic fintech, though it currently faces challenges related to regulatory support and technological infrastructure.

AI Applications in Takaful (Islamic Insurance)

The Takaful industry, representing Islamic insurance, has begun integrating AI to enhance various aspects of its operations, including underwriting, claims processing, and customer engagement.

Malaysia: In Malaysia, Takaful operators have been early adopters of AI technologies. Companies such as Takaful Malaysia and Prudential BSN Takaful have implemented AI-driven solutions to automate claims processing, detect fraudulent activities, and personalize customer interactions. These advancements have led to increased operational efficiency and improved customer satisfaction (AI and Islamic finance – Transforming the future of ethical banking, 2024).

Indonesia: Indonesia's Takaful industry is gradually embracing AI, with a focus on enhancing customer service through chatbots and streamlining claims management. However, the adoption rate is slower compared to Malaysia, primarily due to limited investment in technology and a lack of skilled professionals in the AI domain (Malaysia and Indonesia Leading the Charge for Asia's Islamic Banking Revolution, 2024).

Comparative Analysis

Malaysia's Takaful sector is more advanced in AI adoption, benefiting from a supportive regulatory environment and greater investment in technology. Indonesia is in the nascent stages of AI integration in Takaful but shows potential for growth as awareness and investment in technology increase.

Economic Implications of AI Integration in Islamic Finance

Financial Inclusion and SME Development

Financial inclusion has been a major focus of AI-driven Islamic finance in both Malaysia and Indonesia. By leveraging AI, Islamic banks and fintech companies can reach unbanked and underserved populations, offering Shariah-compliant financial services tailored to their needs.

Malaysia: Malaysia has made significant progress in financial inclusion through AI-driven fintech platforms. Government initiatives, such as the Malaysia Digital Economy Blueprint (MyDIGITAL) and the Financial Sector Blueprint 2022-2026 by Bank Negara Malaysia (BNM), emphasize AI-driven financial services to improve accessibility and affordability (BNM, 2023). Islamic fintech platforms like Ethis and Wahed Invest have utilized AI to provide Shariah-compliant investment opportunities to micro, small, and medium enterprises (MSMEs). AI-powered automated investment platforms help match SMEs with ethical investors, streamlining the funding process and improving transparency (Rahim et al., 2023). Furthermore, AI is being used in microfinancing initiatives, allowing banks to assess



creditworthiness using alternative data sources such as transaction history and behavioral patterns. This is especially beneficial for micro-entrepreneurs who lack traditional credit histories but require financing for business growth (Ismail & Yusof, 2023).

Indonesia: Indonesia has the largest Muslim population in the world, yet financial exclusion remains a challenge. AI-driven Islamic fintech solutions are playing a crucial role in bridging this gap. Platforms such as ALAMI and Investree utilize AI-powered credit scoring systems to assess the eligibility of SMEs for Islamic financing (Hasan et al., 2022). The Indonesian government, through Otoritas Jasa Keuangan (OJK) and Bank Indonesia (BI), has been promoting AI-driven financial inclusion programs. Initiatives such as the National Digital Financial Inclusion Strategy (SNKI) aim to expand digital banking and fintech solutions to rural communities. AI chatbots and voice recognition services are helping people in remote areas access Shariah-compliant financial products without requiring a physical banking presence (OJK, 2023).

Comparative Analysis

Malaysia has a more structured regulatory environment supporting AI-driven financial inclusion, with well-established fintech firms integrating AI into Shariah-compliant financial services. In contrast, Indonesia, while experiencing rapid fintech growth, still faces challenges in AI infrastructure, regulatory frameworks, and digital literacy. However, both countries are leveraging AI to expand financial access, particularly for SMEs and underbanked communities.

Job Creation vs. Job Displacement

The integration of AI in Islamic finance has had a dual impact on employment. While AI-driven automation enhances efficiency and creates new job opportunities, it also raises concerns about job displacement in traditional banking roles.

Malaysia: In Malaysia, AI adoption has led to the creation of new job opportunities in Islamic fintech, cybersecurity, data science, and AI-based risk management. The Malaysian government has launched various upskilling programs under MyDigital WorkForce in Tech (MYWiT) and Penjana's AI-Driven Workforce Development Plan to reskill employees affected by automation (Malaysia Digital Economy Blueprint, 2023). Islamic banks such as Maybank Islamic and Bank Islam Malaysia have integrated AI-driven automation in customer service and fraud detection, leading to increased efficiency. However, AI automation in back-office operations has resulted in the downsizing of some traditional banking roles (BNM, 2023).

Indonesia: In Indonesia, AI adoption in Islamic finance is still at a developing stage, meaning job displacement concerns are currently lower compared to Malaysia. However, as AI adoption increases, similar challenges are expected. Indonesian banks and fintech firms are already investing in AI training programs for employees to prepare them for digital transformation (OJK, 2023). A study by Bank Syariah Indonesia (BSI) highlights that while AI-driven automation may replace routine tasks, new opportunities will emerge in fintech development, AI compliance monitoring, and ethical AI governance (Unleashing the Power of AI in Islamic Banking, 2024).



Comparative Analysis

Malaysia is ahead in AI adoption, and while job displacement concerns are more immediate, the government has implemented workforce reskilling programs to mitigate risks. Indonesia, with a relatively lower level of AI integration, still has time to develop strategic policies to balance automation and job creation.

AI's Contribution to GDP Growth

AI adoption in Islamic finance contributes to national economic growth by increasing efficiency, reducing transaction costs, and expanding financial access.

Malaysia: Studies indicate that AI integration in Islamic finance has contributed to Malaysia's GDP growth by improving productivity and efficiency. The Malaysia Islamic Digital Economy (MIDE) report estimates that AI-driven financial services could contribute up to 20% of Malaysia's Islamic finance sector's GDP by 2030 (MIDE, 2023). Islamic banks utilizing AI-driven credit risk assessment and fraud detection have reported higher profitability and reduced non-performing financing (NPF) rates. AI-powered fintech platforms have also boosted investments in halal industries, contributing to overall economic growth (BNM, 2023).

Indonesia: Indonesia's AI-driven Islamic finance sector is still evolving, but its economic impact is growing. The Indonesian Fintech Association (AFTECH) reports that AI-powered Islamic fintech startups have helped increase the efficiency of financing distribution, particularly in microfinance and SME lending (AFTECH, 2023). As Indonesia enhances its AI infrastructure and regulatory framework, the contribution of AI-driven Islamic finance to GDP is expected to rise. The government has set a target for AI to drive at least 10% of GDP growth in the financial sector by 2030 (OJK, 2023).

Comparative Analysis

Malaysia has already seen significant economic contributions from AI-driven Islamic finance, while Indonesia is in the early stages but holds substantial growth potential. As both countries continue investing in AI technologies and fintech innovation, their Islamic finance sectors are expected to become key drivers of economic development.

Analysis of Results

The findings reveal that both Indonesia and Malaysia are progressively integrating AI into their Islamic financial sectors, but at different paces and levels of sophistication. Malaysia has a more structured regulatory environment and advanced AI-driven solutions in Islamic banking, fintech, and takaful. Indonesia, on the other hand, is experiencing rapid fintech growth but faces regulatory and infrastructural challenges in AI adoption.

AI Transformation in Islamic Banking

In Malaysia, AI-driven solutions such as chatbots, fraud detection, and credit scoring models have improved efficiency in Islamic banking (Rahim et al., 2023). This aligns with findings from Aziz and Ibrahim (2023), who emphasise that AI enhances operational risk management in Shariah-compliant banking. Indonesia, while showing significant progress, is still in the early stages of AI implementation in banking services. The regulatory framework by Otoritas Jasa Keuangan (OJK) is gradually adapting to AI advancements but remains less developed



than Bank Negara Malaysia (BNM) (OJK, 2023).

AI in Islamic Fintech

Malaysia's AI-powered fintech ecosystem is highly developed, with firms like Ethis and Wahed Invest leveraging AI for Shariah-compliant investment solutions (Ismail & Yusof, 2023). This is consistent with studies highlighting Malaysia's proactive regulatory approach in fintech development (BNM, 2023). Indonesia, although lagging in fintech regulation, has seen strong AI-driven innovations in peer-to-peer (P2P) financing for SMEs. However, regulatory uncertainties limit scalability (Hasan et al., 2022).

AI in Takaful (Islamic Insurance)

In Malaysia, AI has significantly improved claims processing and fraud detection in takaful operations, reducing costs and enhancing customer satisfaction (Aziz & Ibrahim, 2023). Indonesia's takaful sector has not fully embraced AI, primarily due to limited investment in digital transformation. However, there is potential for AI adoption to improve underwriting efficiency.

Economic Implications of AI Adoption

AI has contributed to economic growth by expanding access to Islamic financial products, particularly in Malaysia (BNM, 2023). In Indonesia, AI-driven fintech solutions have increased financial inclusion, particularly in rural areas. However, scalability challenges persist due to regulatory and infrastructural barriers (OJK, 2023).

Comparison with Existing Literature

The findings align with existing literature that suggests AI is transforming Islamic financial services globally. Studies by Kamaruddin et al. (2023) and Rahim et al. (2023) highlight that AI enhances financial service delivery, risk management, and operational efficiency in Islamic finance.

Regulatory Adaptation: Malaysia's strong regulatory support for AI-driven finance aligns with previous research suggesting that proactive regulatory frameworks drive AI adoption in financial services (BNM, 2023).

AI in Financial Inclusion: The role of AI in expanding financial inclusion, particularly in Indonesia, supports findings by Hasan et al. (2022), which state that AI-powered fintech enables greater access to Shariah-compliant financial services.

Challenges in AI Implementation: Studies indicate that challenges such as regulatory uncertainty and limited digital infrastructure slow AI adoption in Islamic finance (Ismail & Yusof, 2023). This aligns with findings that Indonesia is still in the early stages of AI-driven financial transformation.

Implications of Findings for Islamic Financial Sector and Economic Growth

Policy and Regulatory Implications

Malaysia's regulatory framework can serve as a model for Indonesia in AI governance for Islamic finance. BNM's regulatory sandbox has allowed fintech firms to innovate with AI solutions while ensuring compliance with Shariah principles (BNM, 2023). Indonesia requires



stronger regulatory oversight to balance AI innovation with consumer protection and Shariah compliance (OJK, 2023).

Technological and Industry Implications

Financial institutions in both countries should prioritise AI-driven innovation while ensuring adherence to Islamic financial principles. AI adoption in takaful remains underdeveloped in Indonesia, presenting opportunities for further research and industry investment.

Economic and Social Implications

AI-driven fintech platforms enhance financial inclusion, particularly in Indonesia, by providing Shariah-compliant financial services to underserved populations. AI in Islamic finance has the potential to drive GDP growth by improving efficiency, reducing costs, and expanding market access (Rahim et al., 2023).

Conclusion

This study explored the transformation of AI in Islamic financial sector products in Indonesia and Malaysia, highlighting differences in adoption, regulatory frameworks, and economic implications. Malaysia has a more structured approach to AI integration, particularly in Islamic banking, fintech, and takaful, facilitated by Bank Negara Malaysia (BNM). Indonesia, while experiencing rapid fintech growth, faces regulatory and infrastructural challenges that slow AI adoption. AI-driven financial services have enhanced efficiency, expanded financial inclusion, and contributed to economic growth, but challenges such as job displacement and regulatory uncertainties remain. The implications of AI adoption in Islamic finance suggest that Malaysia's regulatory model could serve as a benchmark for Indonesia to establish a clearer AI governance framework. Financial institutions in both countries should invest in AI-driven solutions while ensuring strict Shariah compliance. Additionally, AI-powered fintech platforms present an opportunity to bridge financial inclusion gaps, especially in Indonesia's rural areas. However, the increasing automation of financial services raises concerns about workforce displacement, emphasizing the need for reskilling programs. Furthermore, leveraging AI in takaful and fintech can enhance fraud detection, risk assessment, and operational efficiency.

For future research, the study recommends focusing on AI governance models tailored to Islamic finance, balancing innovation with Shariah compliance and financial stability. More research is needed on AI-driven financial inclusion, particularly in underserved communities, as well as the impact of AI on employment in Islamic financial institutions. Additionally, integrating AI with blockchain and smart contracts in Islamic finance presents a promising area for exploration. Addressing these research gaps will help ensure that AI contributes to a more inclusive, efficient, and sustainable Islamic financial ecosystem in both Malaysia and Indonesia.

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أساليب النبي صلى الله عليه وسلم التعليمية وأثرها في حفظ السنة

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الملخص

الحمد لله رب العالمين، والصلاة والسلام على أشرف المرسلين، وخاتم النبيين؛ سيدنا محمد وعلى آله وصحبه أجمعين؛ أما بعد: فمما لا شك فيه أن الناس يختلفون اختلافا واضحا في استيعابهم وتحصيلهم لما يلقي عليهم؛ فمنهم سريع التلقي سريع الفهم، ومنهم البطيء الذي يحتاج إلى المساعدة، ومنهم المتوسط بينهما. وقد اهتمت الدراسات التربوية بهذه الفروق الفردية بين المتعلمين، وعملت على إيجاد الحلول المناسبة لها، وكان من بينها التوصية باستخدام الأساليب التعليمية المختلفة لما تشكله من أهمية كبرى في نجاح العملية التعليمية. فالأساليب التعليمية المختلفة تساعد المعلم على أداء عمله بكفاءة وجودة عالية، كما تساعد على اكتساب بعض الخبرات التي تثير اهتمام المتلقي، وتحقيق أهدافه وتشجيع حاجته للتعلم، كما تساعد على اشتراك جميع حواس المتعلم مما يؤدي إلى تعميق وترسيخ ما تعلمه. لذلك؛ فقد باتت الآثار الإيجابية لاستخدام الأساليب التعليمية من المسلمات التي أثبتت جدواها الدراسات، وبرهن عليها الواقع. وقد كان النبي صلى الله عليه وسلم أفضل علم، وخير مرب عرفته البشرية، فقد كان صلى الله عليه وسلم يستخدم من الأساليب التعليمية المختلفة ما يساعد على تقريب المفاهيم إلى الأذهان، ويساعد على تعميقها وترسيخها في العقول والقلوب. ولا شك أن استخدام النبي صلى الله عليه وسلم لهذه الأساليب كان له أثره البالغ في تعليم الصحابة الكرام؛ حيث ربي جيلاً استطاع أن يحمل علوم الإسلام ونوره وهداياته إلى الدنيا كلها، وأن يحفظ السنة المطهرة ويحافظ عليها حتى وصلت إلينا جيلاً بعد جيل غضة طرية. وبفضل أساليب النبي صلى الله عليه وسلم في التعليم؛ صار أصحابه أوعيةً أمينة لحفظ القرآن والسنة، تعلُّماً وتعليماً ونشرًا، يقضون ليلهم ونهارهم، وحلهم وترحالهم في تلقِّي النور المبين من النبي الأمين صلى الله عليه وسلم. هذا؛ ويأتي هذا البحث لإلقاء الضوء على الأساليب التي استخدمها النبي صلى الله عليه وسلم في تعليم أصحابه، وطريقته في التعليم وذلك من خلال ما يأتي: التمهيد: تعريف الأساليب التعليمية. البحث الأول: سمات الأساليب النبوية في التعليم. المبحث الثاني: بعض أساليب النبي صلى الله عليه وسلم في التعليم.

الكلمات المفتاحية: أساليب النبي، التعليمية، حفظ السنة

التمهيد: مفهوم الأساليب التعليمية

تعريف الأساليب لغة:

الأساليب مفرداتها أسلوب، ويراد به عدة معان:

- ١- الطريقة، أو المذهب، أو النمط؛ يقال: "سلكت أسلوب فلان في معالجة المشكلة، أي طريقته. ويقال: "لكل إنسان أسلوب في الحياة"، أي طريقة، ومذهب، وأسلوب الحكم: شكله ونظامه، والأساليب الحديثة للتربية: المناهج، والطرق العلمية.

٢- طريقة الكتابة: يقال: "لكل أديب أسلوبه" يعني طريقته في الكتابة، وأساليب القول: فنونه المتنوعة- وأسلوب العصر: السمة الغالبة على العصر وأسلوب رشيق: أنيق، وأسلوب سخي: ركيك، وركاكة الأسلوب: ضعفه.

٣- الوسيلة: وهي طريقة الوصول إلى المطلوب^(١).

قال الزبيدي: "والأسلوب: الوجه والمذهب. يُقال: هم في أسلوب سوء. ويُجمع على أساليب. وقد سلك أسلوبه: طريقته. وكلامه على أساليب حسنة. والأسلوب، بالضم: الفن. يُقال: أخذ فلان في أساليب من القول، أي أقانين منه"^(٢).

تعريف الأسلوب اصطلاحاً:

من خلال التعريف اللغوي السابق نستطيع القول بأن الأسلوب التعليمي: هو الإجراء الذي يتخذه المعلم في إيصال المادة التعليمية للمتعلم^(٣).

المبحث الأول: مبادئ وسمات الأسلوب النبوي في التعليم

إن تفرد الأسلوب النبوي في التعليم عن غيره من الأساليب الوضعية من المسلمات التي لا تحتاج إلى دليل أو برهان. لقد كان هذا الأسلوب النبوي الفريد مصدر إلهام لأصحابه الكرام الذين تتلمذوا على يديه صلى الله عليه وسلم فبرعوا في شتى العلوم والمعارف.

ولا شك أن أسلوباً فريداً كهذا يتميز بسمات ومبادئ من أهمها ما يأتي:

١- ربانية المنهج:

فالنبي صلى الله عليه وسلم مؤيد بالوحي الشريف، وأن ما ينطق به هو من الوحي المبلغ عنه صلى الله عليه وسلم. هناك آيات كثيرة تتحدث عن كون السنة النبوية وحياً كالقرآن العظيم، منها: قول الله تعالى: "وَمَا يَنْطِقُ عَنِ الْهَوَىٰ * إِنْ هُوَ إِلَّا وَحْيٌ يُوحَىٰ" [النجم: ٣-٤]. فقد دلت الآية الكريمة على أن السنة وحي من الله لرسوله صلى الله عليه وسلم، وأنه معصوم فيما يخبر به عن الله تعالى وعن شرعه؛ لأن كلامه لا يصدر عن هوى، وإنما يصدر عن وحي يوحى. جاء في تفسير السعدي: "لا يتبع إلا ما أوحى الله إليه من الهدى والتقوى، في نفسه وفي غيره، ودل هذا على أن السنة وحي من الله لرسوله صلى الله عليه وسلم، كما قال تعالى: (وَأَنْزَلَ اللَّهُ عَلَيْكَ الْكِتَابَ وَالْحِكْمَةَ) وأنه معصوم فيما يخبر به عن الله تعالى وعن شرعه، لأن كلامه لا يصدر عن هوى، وإنما يصدر عن وحي يوحى"^(٤). وقوله تعالى: "قُلْ لَا أَقُولُ لَكُمْ عِنْدِي خَزَائِنُ اللَّهِ وَلَا أَعْلَمُ الْغَيْبُ وَلَا أَقُولُ لَكُمْ إِنِّي مَلَكٌ إِنْ أَتَّبِعْ إِلَّا مَا يُوحَىٰ إِلَيَّ" [الأنعام: ٥٠].

(١) معجم اللغة العربية المعاصرة (٢/١٠٨٩).

(٢) تاج العروس (ص ٧٢).

(٣) دراسات في المناهج والأساليب العامة ص ١٠٩.

(٤) تفسير السعدي ص ٨١٨.

فقد دلت الآية الكريمة على أنه صلى الله عليه وسلم لا يفعل إلا اتباع ما يُوحى إليه من غير أن يكون له مدخل ما في الوحي أو في الموحى بطريق الاستدعاء أو بوجه آخر من الوجوه أصلاً^(٥).

وقد تواترت الأحاديث الصحيحة على أنه صلى الله عليه وسلم لا يصدر في أقواله وأفعاله إلا عن ما يوحى إليه ربه عز وجل.

عن المقدام بن معد يكرب رضي الله عنه أن رسول الله صلى الله عليه وسلم قال: "أَلَا إِنِّي أُوتِيتُ الْقُرْآنَ وَمِثْلَهُ مَعَهُ ، أَلَا يُوشِكُ رَجُلٌ شَبَعَانٌ عَلَى أَرْيَكْتِهِ يَقُولُ : عَلَيَّكُمْ هَذَا الْقُرْآنُ ، فَمَا وَجَدْتُمْ فِيهِ مِنْ خَلَالٍ فَأَجْلُوهُ ، وَمَا وَجَدْتُمْ فِيهِ مِنْ حَرَامٍ فَحَرِّمُوهُ ، أَلَا وَإِنَّ مَا حَرَّمَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ كَمَا حَرَّمَ اللَّهُ"^(٦).

وقد بعث الله نبيه محمداً صلى الله عليه وسلم معلماً ومزكياً، ومبشراً ونذيراً؛ قال الله تعالى: "هُوَ الَّذِي بَعَثَ فِي الْأُمِّيِّينَ رَسُولًا مِّنْهُمْ يَتْلُو عَلَيْهِمْ آيَاتِهِ وَيُزَكِّيهِمْ وَيُعَلِّمُهُمُ الْكِتَابَ وَالْحِكْمَةَ" [الجمعة: ٢].

فالحكمة من بعثته صلى الله عليه وسلم أن يعلم أمته بما أوحاه إليه ربه، فكانت حياته صلى الله عليه وسلم كلها تعليماً وتربية لأصحابه، مما يجعلها المثال الذي يجب أن يحتذى في التربية والتعليم.

٢- الرفق واللين والرحمة

كذلك من سمات الأسلوب النبوي في التعليم؛ الرفق واللين والرحمة؛ فقد كان النبي صلى الله عليه وسلم يحب الرفق في كل شيء ويثني على المتصفين به ، ويدعو إلى جعله منهج حياة، وسببا من أسباب النجاح والكمال.

عن عائشة رضي الله عنها قالت: قال رسول الله صلى الله عليه وسلم: "يَا عَائِشَةُ إِنَّ اللَّهَ رَفِيقٌ يُحِبُّ الرِّفْقَ، وَيُعْطِي عَلَى الرِّفْقِ مَا لَا يُعْطِي عَلَى الْعُنْفِ، وَمَا لَا يُعْطِي عَلَى مَا سِوَاهُ"^(٧).

وعلى هذه القاعدة العظيمة في التعامل كان تعامل النبي صلى الله عليه وسلم في تعليم أصحابه وتربيتهم؛ فعن أبي هريرة رضي الله عنه أن رسول الله صلى الله عليه وسلم قال: "إِنَّمَا أَنَا لَكُمْ بِمَنْزِلَةِ الْوَالِدِ أَعْلَمُكُمْ، فَإِذَا أَتَى أَحَدُكُمْ الْغَائِطَ فَلَا يَسْتَقْبِلِ الْقِبْلَةَ، وَلَا يَسْتَدْبِرُهَا، وَلَا يَسْتَطْبُ بِيَمِينِهِ" وكان يأمر بثلاثة أحجار، وينهى عن الرؤث والرمّة^(٨).

والمأمل في هذا الحديث الشريف أول ما يري انتباهه هو استخدام النبي صلى الله عليه وسلم لهذا الأسلوب الرقيق واللطيف في التعليم، ولا شك أنه هذا الأسلوب الرحيم سياترب عليه طمأنة المتعلم، ويكون له أثر إيجابي كبير في تحصيله واستفادته.

ولشدة رحمته ولينه صلى الله عليه وسلم؛ كان يلاحظ طلابه ويدرك حاجتهم، وما يتطلعون إليه، ويحقق لهم ما يحبون، وفي هذا ما فيه من حب المتعلم لأستاذه ، وميله إليه وتعلقه به، واستفادته منه.

(٥) تفسير أبي السعود (٣/١٣٧).

(٦) سنن أبي داود، باب: في لزوم السنة (١٣/٧).

(٧) صحيح مسلم باب: فضل الرفق (٢٠٠٣/٤) رقم الحديث: ٢٥٩٣.

(٨) سنن أبي داود، باب: كراهية استقبال القبلة عند الحاجة (٨/٨٠٨).

عَنْ مَالِكِ بْنِ الْحُوَيْرِثِ، قَالَ: أَتَيْنَا رَسُولَ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ وَنَحْنُ شَبَبَةٌ مُتَفَارِقُونَ، فَأَقَمْنَا عِنْدَهُ عِشْرِينَ لَيْلَةً، وَكَانَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ رَحِيمًا رَقِيقًا، فَظَنَّ أَنَّا قَدْ اشْتَقْنَا أَهْلَنَا، فَسَأَلَنَا عَنْ مَنْ تَرَكْنَا مِنْ أَهْلِنَا، فَأَخْبَرْنَاهُ، فَقَالَ: «ارْجِعُوا إِلَى أَهْلِيكُمْ، فَأَقِيمُوا فِيهِمْ وَعَلِّمُوهُمْ، وَمُرُوهُمْ فَإِذَا حَضَرَتِ الصَّلَاةُ فَلْيُؤْذِنْ لَكُمْ أَحَدُكُمْ، ثُمَّ لِيُؤْمَكُم أَكْبَرُكُمْ»^(٩).

وتتأكد رحمته ولينه صلى الله عليه وسلم مع أسحابه؛ عند وقوع الخطأ غير المتعمد؛ لأن النفوس أحياناً قد يستثيرها الخطأ فتتسبب في التعامل معه بالرحمة والرفق، وتميل بقوة إلى الردع والتأديب.

عَنْ مُعَاوِيَةَ بْنِ الْحَكَمِ السُّلَمِيِّ، قَالَ: بَيْنَا أَنَا أَصْلَبِي مَعَ رَسُولِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، إِذْ عَطَسَ رَجُلٌ مِنَ الْقَوْمِ، فَقُلْتُ: يَرْحَمُكَ اللَّهُ فَرَمَانِي الْقَوْمُ بِأَبْصَارِهِمْ، فَقُلْتُ: وَاتُّكِلُ أُمِّيَاءَهُ، مَا شَأْنُكُمْ؟ تَنْظُرُونَ إِلَيَّ، فَجَعَلُوا يَضْرِبُونَ بِأَيْدِيهِمْ عَلَى أَفْخَازِهِمْ، فَلَمَّا رَأَيْتُهُمْ يُصَمِّتُونَنِي لِكَيْ سَكَتُ، فَلَمَّا صَلَّى رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، فَبِأَيِّ هُوَ وَأُمِّي، مَا رَأَيْتُ مُعَلِّمًا قَبْلَهُ وَلَا بَعْدَهُ أَحْسَنَ تَعْلِيمًا مِنْهُ، فَوَاللَّهِ، مَا كَهَرَنِي وَلَا ضَرَبَنِي وَلَا شَتَمَنِي، قَالَ: "إِنَّ هَذِهِ الصَّلَاةُ لَا يَصْلُحُ فِيهَا شَيْءٌ مِنْ كَلَامِ النَّاسِ، إِنَّمَا هُوَ التَّسْبِيحُ وَالتَّكْبِيرُ وَقِرَاءَةُ الْقُرْآنِ"^(١٠).

إن التعامل بالرفق والرحمة يورث النفس نوعاً من الطمأنينة والهدوء، ويجعل تفهم المشكلة والتعامل معها أكثر نجاحاً وتحقيقاً للأهداف بخلاف ما لو صَحِبَ ذلك نوعٌ من التوتر^(١١).

٣- التيسير لا التعسير

وهذا المبدأ من المبادئ التي لا غنى عنها في عملية التربية والتعليم؛ ذلك أن عقل الإنسان ونفسه تميلان دائماً إلى ما فيه اليسر والسهولة، وتنفران من كل ما فيه المشقة والتعسير^(١٢).

ولذلك كان النبي صلى الله عليه وسلم يؤكد على ضرورة اتخاذ مبدأ التيسير مبدأً أساسياً في التربية والتعليم بصور شتى؛ فعَنْ أَنَسِ بْنِ مَالِكٍ، عَنِ النَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، قَالَ: "يَسِّرُوا وَلَا تُعَسِّرُوا، وَبَسِّرُوا، وَلَا تُنْفِرُوا"^(١٣).

ولا يخفى ما في الجمع بين الضدين من تلخيص فلسفة التعليم عنده صلى الله عليه وسلم، حيث إن الأمور لا تعرف ولا تدرك جيداً إلا بمعرفة أضرارها، فلو أنه صلى الله عليه وسلم اكتفى بقوله: "يسروا" لظن من يأتي بالتيسير مرة أو مرات أن قد أصاب الهدف، وأنه متبع لهذا المبدأ، لذلك جمع صلى الله عليه وسلم بين الضدين ليؤكد على ضرورة اتخاذ التيسير أساساً في جميع الأحوال.

قال الإمام النووي: "إنما جمع في هذه الألفاظ بين الشيء وضده؛ لأنه قد يفعلهما في وقتين، فلو اقتصر على يسروا لصدق ذلك على من يسر مرة أو مرات، وعسر في معظم الحالات، فإذا قال: ولا تعسروا انتفى التعسير في جميع الأحوال، وهذا هو المطلوب"^(١٤).

(٩) صحيح مسلم، باب من أحق بالإمامة (٤٦٥/١ ح ٦٧٤).

(١٠) صحيح مسلم، باب تحريم الكلام في الصلاة (٣٨١/١ ح ٥٣٧).

(١١) <http://darululoom-deoband.com/arabic/articles/tmp>

(١٢) دراسات في المناهج والأساليب العامة ص ١٠٩.

(١٣) صحيح البخاري، باب: مَا كَانَ النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ يَتَخَوَّلُهُمْ بِالْمَوْعِظَةِ وَالْعِلْمِ كَيْ لَا يَنْفِرُوا (٢٥/١ ح ٦٩).

(١٤) شرح النووي على صحيح مسلم (٤١/١٢).

ولذلك كان النبي صلى الله عليه وسلم يأمر أصحابه دائماً بالتيسير؛ عَنْ أَبِي بُرْدَةَ، قَالَ: بَعَثَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ أَبَا مُوسَى، وَمُعَاذَ بْنَ جَبَلٍ إِلَى الْيَمَنِ، قَالَ: وَبَعَثَ كُلَّ وَاحِدٍ مِنْهُمَا عَلَى مَخْلَافٍ، قَالَ: وَالْيَمَنُ مَخْلَافَانِ، ثُمَّ قَالَ: "يَسِرَّا وَلَا تُعَسِّرَا، وَبَشِّرَا وَلَا تُنْفِرَا" (١٥).

قال القاضي عياض: "فيه ما يجب الاقتداء به من التيسير في الأمور، والرفق بالناس، وتحبيب الإيمان إليهم، وترك الشدة والتنفير لقلوبهم، لا سيما فيمن كان قريب العهد به. وكذلك يجب فيمن قارب حدَّ التكليف من الأطفال ولم يتمكن رسوخ الأعمال في قلبه ولا التمرن عليها، ألا يُشدد عليه ابتداء؛ لئلا ينفر عن عمل الطاعات" (١٦).

وبين صلى الله عليه أن لحمة هذا الدين وسداه تقوم على التيسير لا العسير في كل الأمور، وأن التعسير والتنطع في كل الأمور خاصة في فيما يتعلق بقضية التعليم أمر يتنافى مع سماحة هذا الدين.

عَنْ أَبِي هُرَيْرَةَ، عَنِ النَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ قَالَ: "إِنَّ الدِّينَ يُسْرٌ، وَلَنْ يُشَادَّ الدِّينَ أَحَدٌ إِلَّا غَلَبَهُ، فَسَدِّدُوا وَقَارِبُوا، وَأَبْشِرُوا، وَاسْتَعِينُوا بِالْعَدْوَةِ وَالرُّوحَةِ وَسَيِّئٍ مِنَ الدُّلْجَةِ" (١٧).

قال العيني: "والمعنى: لا يتعمق أحدكم في الدين فيترك الرفق إلا غلب الدين عليه، وعجز ذلك المتعمق وانقطع عن عمله كله أو بعضه" (١٨).

وبين صلى الله عليه وسلم أن الله تعالى بعثه معلماً ميسراً، ولم يبعثه معسراً ولا متشدداً لا إلى من أرسل إليهم، ولا في خاصة نفسه صلى الله عليه وسلم.

عن جابر بن عبد الله رضي الله عنه أن النبي صلى الله عليه وسلم قال: "إِنَّ اللَّهَ لَمْ يَبْعَثْنِي مُعْتَبَرًا، وَلَا مُتَعَتِّبًا، وَلَكِنْ بَعَثَنِي مُعَلِّمًا مَيَسِّرًا" (١٩).

إن هذه السمات التي تمت الإشارة إليها هي غيظ من فيض، وقطر من بحر، فسمات المنهج النبوي في التعليم أكثر من أن تحصى في هذه العجالة، ولا يمكن استيعابها نظراً لضيق المقام.

المبحث الثاني: بعض أساليب النبي صلى الله عليه وسلم في التعليم

لقد من الله على المؤمنين ببعثة النبي صلى الله عليه وسلم، فقال تعالى: ﴿لَقَدْ مَنَّ اللَّهُ عَلَى الْمُؤْمِنِينَ إِذْ بَعَثَ فِيهِمْ رَسُولًا مِنْ أَنْفُسِهِمْ يَتْلُو عَلَيْهِمْ آيَاتِهِ وَيُزَكِّيهِمْ وَيُعَلِّمُهُمُ الْكِتَابَ وَالْحِكْمَةَ وَإِنْ كَانُوا مِنْ قَبْلُ لَفِي ضَلَالٍ مُبِينٍ﴾ [آل عمران: ١٦٤].

وكان النبي صلى الله عليه وسلم هو الأسوة والقودة للصحابة الكرام رضوان الله عليهم، وقد أمرهم الله عز وجل بطاعته، واتباع أمره، وجعل طاعته من طاعته سبحانه وتعالى، فقال: ﴿مَنْ يُطِيعِ الرَّسُولَ فَقَدْ أَطَاعَ اللَّهَ﴾ [النساء: ٨٠]، ولا تتحقق طاعته صلى الله عليه وسلم إلا بحفظ سنته والعمل بها.

(١٥) صحيح البخاري، باب: بعث أبي موسى ومعاذ إلى اليمن (١٦١/٥ ح ٤٣٤١).

(١٦) إكمال المعلم بفوائد مسلم (٣٧/٦).

(١٧) صحيح البخاري: باب: الدين يسر (١٦/١ ح ٣٩).

(١٨) عمدة القاري (٢٣٧/١).

(١٩) صحيح مسلم، باب: بَيَانُ أَنَّ تَخْيِيرَ امْرَأَتِهِ لَا يَكُونُ طَلَاقًا إِلَّا بِالْبَيِّنَةِ (١١٠٤/٢ ح ١٤٧٨).

لذا فقد دعا النبي صلى الله عليه وسلم أصحابه إلى حفظ السنة والعناية بها؛ فقال عليه الصلاة والسلام، وهو يحث وفد عبد القيس على حفظ سنته واتباع هديه: "احْفَظُوهُ وَأَخْبِرُوهُ مَنْ وَرَاءَكُمْ"^(٢٠)، وقد بَوَّب البخاري على هذا الحديث فقال: باب تحريض النبي صلى الله عليه وسلم وفد عبد القيس على أن يحفظوا الإيمان والعلم، ويخبروا من وراءهم. وقد سلك النبي صلى الله عليه وسلم من أجل تعليم أصحابه وتحفيظهم لسنته المطهرة أساليب متنوعة ومتعددة نذكر منها.

أولاً: أسلوب التآني وعدم سرد الحديث:

لم يكن صلى الله عليه وسلم يسرد الحديث سرّاً متتابعاً بل يتأني في إلقاء الكلام ليتمكّن من الذهن، قالت عائشة رضي الله عنها فيما أخرجه الترمذي عن عائشة، قَالَتْ: "مَا كَانَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ يَسْرُدُ سَرْدَكُمْ هَذَا، وَلَكِنَّهُ كَانَ يَتَكَلَّمُ بِكَلَامٍ يُبَيِّنُهُ، فَصَلُّ، يَحْفَظُهُ مَنْ جَلَسَ إِلَيْهِ"^(٢١).

أي أن كلامه صلى الله عليه وسلم كان قليلاً، وكان واضحاً مفصلاً، يحفظه كل من جلس إليه صلى الله عليه وسلم، ولا يخفى أن هذا ساعد الصحابة الكرام على حفظ السنة خاصة الأميين منهم الذين كانوا لا يجيدون القراءة والكتابة أمثال أبي هريرة رضي الله عنه.

ثانياً: عدم إطالة الكلام عن مقتضى الحاجة

فلم يكن صلى الله عليه وسلم يطيل الحديث بل كان كلامه قصداً، قالت عائشة فيما هو متفق عليه: "يُحَدِّثُ حَدِيثًا لَوْ عَدَّهُ الْعَادُّ لَأَخْصَاهُ"^(٢٢).

أي أنه صلى الله عليه وسلم كان لا يتكلم إلا بما تدعوا إليه الحاجة، وبما يقتضيه المقام، حتى أن من أراد أن يعد كلامه صلى الله عليه وسلم أطاق ذلك، نظراً لقلته، وبلاغته وترتيبه.

قال الحافظ ابن حجر: "أي لو عد كلماته أو مفرداته أو حروفه لأطاق ذلك وبلغ آخرها والمراد بذلك المبالغة في الترتيل والتفهم"^(٢٣).

ثالثاً: أسلوب التكرار:

فكثيراً ما كان صلى الله عليه وسلم يعيد الحديث لتعنيه الصدور؛ عن أنس بن مالك: "أَنَّ رَسُولَ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ كَانَ إِذَا تَكَلَّمَ بِكَلِمَةٍ أَعَادَهَا ثَلَاثًا لِنَعْقَلِ عَنْهُ"^(٢٤).

وَعَنْ أَنَسٍ عَنِ النَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ أَنَّهُ كَانَ إِذَا سَلَّمَ ثَلَاثًا، وَإِذَا تَكَلَّمَ بِكَلِمَةٍ أَعَادَهَا ثَلَاثًا"^(٢٥).

(٢٠) صحيح البخاري، باب: تَحْرِيزِ النَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ وَفَدَ عَبْدِ الْقَيْسِ عَلَى أَنْ يَحْفَظُوا الْإِيمَانَ وَالْعِلْمَ، وَيُخْبِرُوا مَنْ وَرَاءَهُمْ (٢٩/١) ح (٨٧).

(٢١) أخرجه الترمذي، أبواب المناقب، باب في كلام النبي صلى الله عليه وسلم (٦٠٠/٥) ح (٣٦٣٩).

(٢٢) متفق عليه؛ أخرجه البخاري رقم: ٣٥٦٧، ومسلم برقم: ٢٢٩٨.

(٢٣) فتح الباري (٥٧٨/٦).

(٢٤) أخرجه الحاكم في المستدرک (٣٠٤/٤) ح (٧١٦)، وقال: "هَذَا حَدِيثٌ صَحِيحٌ عَلَى شَرْطِ الشَّيْخَيْنِ وَلَمْ يُخَرِّجَاهُ، وَقَالَ الذَّهَبِيُّ: "أَخْرَجَهُ الْبُخَارِيُّ دُونَ قَوْلِهِ لِنَعْقَلِ عَنْهُ.

(٢٥) أخرجه البخاري، باب: من أعاد الحديث ثلاثاً ليفهم (٣٠/١) ح (٩٤).

فهذا الأسلوب النبوي فيه مراعاة تفاوت قدرات المتعلمين من حيث الإدراك والضبط، حتى تقع المعلومة في قلوب الجميع بطريقة صحيحة دون خطأ، ويمكن فهمها واستيعابها على أفضل وجه ممكن.

رابعاً: أسلوب الحوار والمناقشة:

يساعد هذا الأسلوب على شحذ الأذهان وتشويق النفوس لمعرفة المسألة المطلوبة وإثارة عنصر التحدي والتقرب لدى المتعلم. وقد أصبحت طريقة الحوار والمناقشة وإثارة الأسئلة من أهم طرق التدريس الحديثة، بكونها تثير الاهتمام، وتدعو إلى التفكير اللذين يعدان من أهم خطوات التعلم. وقد وضعت طرق التدريس الحديثة قواعد لتحقيق فاعلية هذه الطريقة، منها أن يكون السؤال للجميع، وأن تتاح لهم فرصة التفكير قبل الإجابة، وغير ذلك من القواعد التي تضمن فاعلية هذه الطريقة.

وقد استخدم الرسول صلى الله عليه وسلم هذا الأسلوب مرات كثيرة إما من خلال طرح السؤال ليجيب عنه المتعلمون، إن استطاعوا، أو ينتظروا ليسمعوا الإجابة منه صلى الله عليه وسلم. ومما يؤكد ذلك أن الإمام البخاري رحمه الله خصص باباً في صحيحه تحت عنوان "باب طرح الإمام المسألة ليختبر ما عندهم من العلم"، وأخرج فيه حديث عبد الله بن عمر، عَنِ النَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ قَالَ: "إِنَّ مِنَ الشَّجَرِ شَجَرَةً لَا يَسْقُطُ وَرَقُهَا، وَإِنَّهَا مَثَلُ الْمُسْلِمِ، حَدِّثُونِي مَا هِيَ؟" قَالَ: فَوَقَّعَ النَّاسُ فِي شَجَرِ الْبَوَادِي قَالَ عَبْدُ اللَّهِ: فَوَقَّعَ فِي نَفْسِي أَنَّهَا النَّخْلَةُ، فَاسْتَحْيَيْتُ، ثُمَّ قَالُوا: حَدِّثْنَا مَا هِيَ يَا رَسُولَ اللَّهِ، قَالَ: «هِيَ النَّخْلَةُ»^(٢٦).

خامساً: أسلوب القصة:

تعتمد القصة على الرواية والتشويق جذباً للسامعين وتهيئة لهم لسماع ما يريد المعلم قوله مما يعين على فهم المعنى وتقريره في نفوسهم. وقد استخدم الرسول صلى الله عليه وسلم أسلوب القصة في مواضع كثيرة، ومن ذلك ما ورد في الصحيح من قصة الثلاثة الذين خرجوا يمشون، فأصابهم المطر، فدخلوا في غار في جبل فحطت عليهم صخرة فقال بعضهم لبعض: ادعوا الله بأفضل عمل عملتموه. فأخذ كل واحد منهم يتحدث عن أفضل عمل عمله، وفي كل مرة يتحدث بها أحدهم يفرج الله عنهم فرجة، حتى انتهى الثالث من رواية عمله، فكشف الله عنهم^(٢٧).

سادساً: أسلوب ضرب الأمثال:

وضرب الأمثال يساعد على إبراز المعنى في صورة رائعة لها وقعها في النفس سواء كانت تشبيهاً أو قولاً مرسلًا. والتمثيل هو القلب الذي يبرز المعاني في صورة حية تستقر في الأذهان بتشبيه الغائب بالحاضر والمعقول بالمحسوس، وقياس النظير على النظير، وكم من معنى جميل أكسبه التمثيل روعة وجمالاً، فكان ذلك أدعى لتقبل النفس له وإقناع العقل به^(٢٨).

(٢٦) أخرجه البخاري في صحيحه، كتاب العلم، باب طرح الإمام المسألة ليختبر ما عندهم من العلم (٢٢/١)، وينظر: أهمية دراسة السيرة للمعلمين - حصة بنت عبد الكريم (ص ٣٦).

(٢٧) الحديث بطوله أخرجه البخاري في صحيحه، كتاب الأدب، باب إجابة دعاء من بر والديه (٩٢/٧)، وينظر: أهمية دراسة السيرة للمعلمين - حصة بنت عبد الكريم (ص ٣٨).

(٢٨) طرائق النبي صلى الله عليه وسلم (ص ١٢٤)، وينظر: أهمية دراسة السيرة للمعلمين - حصة بنت عبد الكريم (ص ٣٩).

وكان رسول الله صلى الله عليه وسلم يستخدم ضرب الأمثال في مواقف كثيرة ومن ذلك ما روي عن جابر بن عبد الله، قال: قَالَ النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ: " مَثَلِي، وَمَثَلُ الْأَنْبِيَاءِ كَرَجُلٍ بَنَى دَارًا، فَأَكْمَلَهَا وَأَحْسَنَهَا إِلَّا مَوْضِعَ لَبِنَةٍ، فَجَعَلَ النَّاسُ يَدْخُلُونَهَا وَيَتَعَجَّبُونَ وَيَقُولُونَ: لَوْلَا مَوْضِعُ اللَّبِنَةِ " (٢٩).

ومن ذلك أيضاً ما رواه الإمام مسلم عن التُّعْمَانِ بْنِ بَشِيرٍ، قَالَ: قَالَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ: "مَثَلُ الْمُؤْمِنِينَ فِي تَوَادِّهِمْ، وَتَرَاحُمِهِمْ، وَتَعَاطُفِهِمْ مَثَلُ الْجَسَدِ إِذَا اشْتَكَى مِنْهُ عُضْوٌ تَدَاعَى لَهُ سَائِرُ الْجَسَدِ بِالسَّهَرِ وَالْحُمَى" (٣٠).

سابعاً: أسلوب التشجيع:

يساعد تشجيع المتعلم على زيادة تركيزه وإقباله على العلم ليستزيد منه أكثر فأكثر، ولهذا فإن على المعلم أن يشيد بالموافق الحسنة لطلابه، وأن يشجعهم على السؤال والحوار والمناقشة؛ لأن هذا أدعى إلى توسيع مداركهم وتمكينهم من استيعاب المادة العلمية بشكل أفضل. وقد كان رسول الله صلى الله عليه وسلم لا يترك مناسبة إلا ويثني فيها على من أصاب من أصحابه. ونجد في كتاب فضائل ومناقب الصحابة في صحيح البخاري ومسلم عدداً من النصوص التي تحمل الكثير من الثناء والتشجيع من الرسول صلى الله عليه وسلم على واحد أو أكثر من أصحاب رسول الله صلى الله عليه وسلم، ومن ذلك ثناء الرسول صلى الله عليه وسلم على أبي عبيدة رضي الله عنه حينما قدم أهل اليمن على رسول الله صلى الله عليه وسلم عليه وسلم طالبين أن يبعث معهم رجلاً ليعلمهم السنة والإسلام، فأخذ رسول الله صلى الله عليه وسلم بيد أبي عبيدة قائلاً: "هذا أمين هذه الأمة"^(٣١).

عَنْ حُذَيْفَةَ، قَالَ: جَاءَ الْعَاقِبُ وَالسَّيِّدُ، صَاحِبَا نَجْرَانَ، إِلَى رَسُولِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ يُرِيدَانِ أَنْ يُلَاعِنَاهُ، قَالَ: فَقَالَ أَحَدُهُمَا لِصَاحِبِهِ: لَا تَفْعَلْ، فَوَاللَّهِ لَئِنْ كَانَ نَبِيًّا فَلَا عَنَّا لَا نَفْلُحْ نَحْنُ، وَلَا عَقِبُنَا مِنْ بَعْدِنَا، قَالَا: إِنَّا نُعْطِيكَ مَا سَأَلْتَنَا، وَابْعَثْ مَعَنَا رَجُلًا أَمِينًا، وَلَا تَبْعَثْ مَعَنَا إِلَّا أَمِينًا. فَقَالَ «لَا بُعَيْنَ مَعَكُمْ رَجُلًا أَمِينًا حَقٌّ أَمِينٌ»، فَاسْتَشْرَفَ لَهُ أَصْحَابُ رَسُولِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ فَقَالَ: «فُمْ يَا أَبَا عُبَيْدَةَ بْنِ الْجَرَّاحِ» فَلَمَّا قَامَ، قَالَ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ: «هَذَا أَمِينٌ هَذِهِ الْأُمَّةُ» (٣٢).

ثامناً: أسلوب مراعاة الفروق الفردية:

من المعلوم أن الناس يختلفون في قدراتهم الاستيعابية إما بسبب خلفيتهم الثقافية أو الاجتماعية أو التعليمية أو بسبب تفاوت أعمارهم واهتماماتهم، فكل هذه الأشياء تجعل الفروق الفردية بين الناس شيئاً ملموساً ومحسوساً ينبغي للمعلم أن ينتبه له ويلاحظه؛ ليقدم لكل متعلم حسب قدرته الاستيعابية ووفقاً لواقع الحال. ويندرج تحت مراعاة الفروق الفردية التدرج في التعليم، لكونه يراعي السن والبيئة والثقافة. وقد كان رسول الله صلى الله عليه وسلم أحرص الناس على مراعاة الفروق الفردية والتدرج في التعليم ويتضح ذلك من وصيته صلى الله عليه وسلم لمعاذ رضي الله عنه لما بعثه إلى اليمن فعن ابن عباس رضي الله عنهما، قال: قال رسول الله صلى الله عليه وسلم لمعاذ بن جبل حين بعثه إلى اليمن: "إِنَّكَ سَتَأْتِي قَوْمًا

(٢٩) أخرجه البخارى: كتاب المناقب، باب: خاتم النبيين صلى الله عليه وسلم (١٨٦/٤).

(٣٠) أخرجه مسلم: كتاب البر والصلة والآداب، باب: تراحم المؤمنين وتعاطفهم (١٩٩٩/٤).

(٣١) ينظر: أهمية دراسة السيرة للمعلمين - حصة بنت عبد الكريم (ص ٤٠).

(٣٢) أخرجه البخارى في صحيحه: كتاب فضائل أصحاب النبي صلى الله عليه وسلم، باب: قصة أهل نجران (١٧١/٥).

مِنْ أَهْلِ الْكِتَابِ، فَإِذَا جِئْتَهُمْ فَأَدْعُهُمْ إِلَى أَنْ يَشْهَدُوا أَنْ لَا إِلَهَ إِلَّا اللَّهُ، وَأَنَّ مُحَمَّدًا رَسُولُ اللَّهِ، فَإِنْ هُمْ طَاعُوا لَكَ بِذَلِكَ، فَأَخْبِرْهُمْ أَنَّ اللَّهَ قَدْ فَرَضَ عَلَيْهِمْ خَمْسَ صَلَوَاتٍ فِي كُلِّ يَوْمٍ وَلَيْلَةٍ، فَإِنْ هُمْ طَاعُوا لَكَ بِذَلِكَ فَأَخْبِرْهُمْ أَنَّ اللَّهَ قَدْ فَرَضَ عَلَيْهِمْ صَدَقَةً، تَتَّخِذُ مِنْ أَغْنِيَائِهِمْ فِتْرَةً عَلَى فُقَرَائِهِمْ، فَإِنْ هُمْ طَاعُوا لَكَ بِذَلِكَ فَإِنَّكَ وَكَرَائِمَ أَمْوَالِهِمْ، وَأَتَقِي دَعْوَةَ الْمَظْلُومِ، فَإِنَّهُ لَيْسَ بَيْنَهُ وَبَيْنَ اللَّهِ حِجَابٌ" (٣٣).

فينبغي للمعلم أن يُراعي الفروق الفردية بين طلابه، فلا يبدأ بدقائق العلم، وعويص مسائله، فيغرقهم في بحر عميق لا يستطيعون النجاة منه، بل يبدؤهم بالأسهل والأيسر؛ لأن الشيء إذا كان في ابتدائه سهلاً حُبب إلى مَنْ يدخل فيه، وتلقاه بانسباط، وكانت عاقبته غالباً بالازدياد منه، بخلاف ضده (٣٤).

تاسعاً: حسن استقبال المتعلم وإكرامه

كان النبي صلى الله عليه وسلم يحسن استقبال من جاءه متعلماً، ويهش له صلى الله عليه وسلم ويكرمه غاية الإكرام. وقد تعددت مواقف النبي صلى الله عليه وسلم التي تظهر حسن استقباله للصحابة الكرام رضوان الله عليهم. فقد استقبل النبي صلى الله عليه وسلم وفد عبد القيس، واتخذ لذلك لباساً خاصاً إشعاراً منه بمزيد الاهتمام بهم؛ فلما دخلوا عليه رحب بهم وقال: "مَرْحَبًا بِالْقَوْمِ، أَوْ بِالْوَفْدِ، غَيْرَ خَزَايَا وَلَا نَدَامَى.." (٣٥). ولما قدم عليه الأشعريون من أهل اليمن قال صلى الله عليه وسلم: "جَاءَ أَهْلُ الْيَمَنِ، هُمْ أَرْقُ أَفْنَدَةً، الْإِيمَانُ يَمَانٍ، وَالْفِقْهُ يَمَانٍ، وَالْحِكْمَةُ يَمَانِيَّةٌ" (٣٦).

وروى مسلم عن أبي رفاعَةَ قال: "انْتَهَيْتُ إِلَى النَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ وَهُوَ يَخْطُبُ، قَالَ: فَقُلْتُ: يَا رَسُولَ اللَّهِ رَجُلٌ غَرِيبٌ، جَاءَ يَسْأَلُ عَنْ دِينِهِ، لَا يَدْرِي مَا دِينُهُ، قَالَ: فَأَقْبَلَ عَلَيَّ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، وَتَرَكَ خُطْبَتَهُ حَتَّى انْتَهَى إِلَيَّ، فَأَتَيْتُ بِكُرْسِيِّ، حَسَبْتُ قَوَائِمَهُ حَدِيدًا، قَالَ: فَقَعَدَ عَلَيْهِ رَسُولُ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، وَجَعَلَ يُعَلِّمُنِي مِمَّا عَلَّمَهُ اللَّهُ، ثُمَّ أَتَى خُطْبَتَهُ، فَأَتَمَّ آخِرَهَا" (٣٧).

لقد كان لهذه الأساليب وغيرها مما يضيق المقام عن ذكره أثر لا يخفى في حفظ الصحابة لحديث النبي صلى الله عليه وسلم وتبليغه للأمة كما أُرِدَ صلى الله عليه وسلم.

الخاتمة

الحمد لله وكفى وصلاة وسلاماً على عباده الذين اصطفى؛ أما بعد فبعد هذه التطوافه السريعة على أهم أساليب النبي الكريم صلى الله عليه وسلم في التعليم نود الإشارة إلى ما يأتي.

١- إن السنة المطهرة هي مفتاح العطاء ونبراس الهدى، بها تفسير وهداية لكل مجريات الأمور.

(٣٣) أخرجه البخاري في صحيحه: باب: بعث أبي موسى ومعاذ إلى اليمن (١٦٢/٥).

(٣٤) الرسول والعلم (ص ١٣٤)، وينظر: أهمية تدريس السيرة للمعلمين (ص ٤٢).

(٣٥) صحيح البخاري، باب: أداء الخمس من الإيمان (٢٠/١ ح ٥٣).

(٣٦) صحيح مسلم، باب: تفاضل أهل الإيمان فيه (٧١/١ ح ٥٢).

(٣٧) صحيح مسلم، باب: حديث التعليم في الخطبة (٥٩٧/٢ ح ٨٧٦).

- ٢- أظهر البحث مدى حرص النبي الكريم صلى الله عليه وسلم على تعليم أصحابه، من خلال تنوع أساليبه والتعليمية وكثرتها.
- ٣- إن قضية الأساليب النبوية في التعليم حظيت بجانب كبير من اهتمام السنة النبوية المطهرة، وقد أُرست السنة النبوية الكثير من الضوابط والآليات لتنمية هذه الأساليب ولاستفادة منها بأكبر قدر ممكن.
- ٤- كان للأساليب النبوية المتنوعة والمتعددة أثر واضح في فهم السنة، وحفظها.
- ٥- يجب على الأمة الإسلامية أفرادا وجماعات الإمام بالتناول النبوي للعملية التعليمية والاستفادة القصوى من منهجه صلى الله عليه وسلم وأساليبه في التربية والتعليم.
- والله من وراء القصد وهو الهادي إلى سواء السبيل

المصادر والمراجع

- إِكْمَالُ الْمُتَعَلِّمِ بِقَوَائِدِ مُسْلِمٍ: لِلْإِمَامِ الْحَافِظِ أَبِي الْفَضْلِ عِيَّاضِ بْنِ مُوسَى بْنِ عِيَّاضِ الْيَحْصِي ت ٥٤٤ هـ، تحقيق: الدكتور يحيى إِسْمَاعِيل (بدون).
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Harnessing Artificial Intelligence for Optimized Zakat and Waqf Management: Strategic Insights from Indonesia and Malaysia

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Abstract

Zakat and Waqf play a crucial role in Islamic social finance by promoting wealth redistribution and sustainable development. However, many institutions managing these funds in Indonesia and Malaysia face inefficiencies due to outdated administrative processes, lack of transparency, and governance challenges. This study explores the potential of Artificial Intelligence (AI) in enhancing the efficiency, accountability, and Shariah compliance of Zakat and Waqf management. Using a mixed-methods approach, the research will collect quantitative data from financial officers in Islamic finance institutions and conduct qualitative interviews with AI experts, policymakers, and Shariah scholars. The expected findings suggest that AI-driven solutions can automate fund allocation, improve financial tracking, and enhance fraud prevention mechanisms, thereby strengthening governance and public trust. However, challenges such as institutional resistance, regulatory uncertainty, and ethical concerns must be addressed to ensure seamless AI adoption. The study will provide policy recommendations for Bank Indonesia and Malaysia's financial regulators, emphasizing the need for Shariah-compliant AI governance frameworks and capacity-building initiatives for Islamic financial institutions. By integrating AI into Zakat and Waqf management, this research contributes to Bank Indonesia's digital transformation agenda, ensuring a more efficient, transparent, and ethical Islamic financial ecosystem.

Keywords: Artificial Intelligence, Zakat, Waqf, Islamic Finance, Indonesia, Malaysia.

Background of the Study

Zakat and Waqf are two fundamental components of Islamic finance that play a significant role in social and economic development. Zakat, an obligatory charitable contribution, is designed to redistribute wealth and alleviate poverty, ensuring financial equity among Muslims (Razak, 2020). Waqf, on the other hand, operates as a voluntary endowment that funds social welfare projects, including education, healthcare, and infrastructure. Both instruments have long been recognized for their contribution to economic stability and community well-being.

In countries like Indonesia and Malaysia, where Islamic finance is well-established, Zakat and Waqf institutions have been instrumental in supporting public welfare. However, despite their importance, many of these institutions still rely on traditional management methods, which often result in inefficiencies, lack of transparency, and suboptimal resource allocation (Razak, 2020). Manual processes, inadequate tracking mechanisms, and delays in fund distribution hinder the effectiveness of Zakat and Waqf in addressing socio-economic challenges.



The emergence of Artificial Intelligence (AI) presents an opportunity to transform the management and governance of Zakat and Waqf (Ishak & Mohamed, 2023). AI-driven solutions, such as machine learning and predictive analytics, can enhance operational efficiency, improve decision-making, and increase transparency. For example, AI can automate the assessment of Zakat eligibility, forecast community needs based on socio-economic data, and optimize Waqf asset management. Several studies have explored the potential of AI in financial systems, yet its application in Islamic finance, particularly in Zakat and Waqf, remains under-researched.

Despite the benefits, integrating AI into Islamic finance requires careful consideration of ethical and Shariah compliance aspects. Concerns related to data privacy, algorithmic biases, and the alignment of AI applications with Islamic principles must be addressed. Given the growing emphasis on digital transformation in Indonesia's financial sector, there is a strong need to examine how AI can be effectively and ethically implemented in Zakat and Waqf institutions.

This research aims to explore the role of AI in optimizing Zakat and Waqf management in Indonesia and Malaysia, identifying the challenges, opportunities, and strategic implications for stakeholders. By addressing both technical and ethical considerations, this study seeks to provide insights that contribute to the advancement of Islamic social finance and align with Bank Indonesia's vision for financial inclusion and digital innovation.

Problem Statement

The effective management of Zakat and Waqf is crucial for ensuring their intended social and economic impact (Mahmood et al., 2020). However, several challenges persist, particularly in administrative efficiency, transparency, and fund distribution. Many Zakat and Waqf institutions in Indonesia and Malaysia continue to operate using outdated methods, leading to inefficiencies and delays in financial disbursement. Limited digital integration further exacerbates issues related to accountability and fund tracking.

The integration of AI into financial management has proven to enhance efficiency in various sectors (Mahmood et al., 2020). However, its implementation in Islamic finance remains limited due to concerns about Shariah compliance, data privacy, and the readiness of institutions to adopt digital solutions. While some studies have highlighted the potential of AI in financial decision-making, there is little empirical evidence on how AI can be tailored to fit the unique needs of Zakat and Waqf institutions.

Bank Indonesia has emphasized the importance of digital innovation and financial inclusion as part of its strategic agenda (World Economic Forum, 2025). However, there is a lack of research on how AI-driven solutions can align with Islamic financial principles while also improving operational effectiveness. Without a clear understanding of the opportunities and risks associated with AI adoption, Zakat and Waqf institutions may struggle to modernize and maximize their impact.



This research seeks to address this gap by investigating how AI can be effectively leveraged in Zakat and Waqf management in Indonesia and Malaysia. The study will explore the extent to which AI can enhance efficiency, transparency, and governance while ensuring compliance with Islamic financial principles.

Research Questions

This study aims to answer the following research questions:

1. How can AI optimize the management and distribution of Zakat and Waqf in Indonesia and Malaysia?
2. What are the key challenges faced by Zakat and Waqf institutions in adopting AI technologies?
3. How can AI-driven solutions align with Shariah compliance and ethical considerations in Islamic finance?
4. What policy recommendations can be proposed to enhance AI integration in Zakat and Waqf management?

Research Objectives

The objectives of this research are:

1. To examine the role of AI in improving efficiency and transparency in Zakat and Waqf management.
2. To identify the challenges and limitations associated with AI adoption in Islamic finance institutions.
3. To analyze the compatibility of AI-driven financial solutions with Shariah compliance requirements.
4. To provide policy recommendations for the effective integration of AI in Zakat and Waqf institutions in Indonesia and Malaysia.

Significance of the Study

This research is significant for several reasons. First, it contributes to the growing discourse on digital transformation in Islamic finance by offering insights into how AI can enhance Zakat and Waqf management (Susanto et al., 2024). Given the increasing importance of financial technology (FinTech) in Indonesia, this study aligns with national efforts to modernize financial services and improve financial inclusion.

Second, the study provides practical implications for policymakers, financial regulators, and Islamic finance institutions. By identifying challenges and proposing solutions, the research can help decision-makers formulate strategies that facilitate AI adoption while maintaining compliance with Islamic financial principles. Third, the findings of this study will benefit academics and researchers in the fields of Islamic finance and AI-driven financial management. The research will contribute to the existing body of knowledge by bridging the gap between technological innovation and Islamic social finance. Finally, this study aligns with Bank Indonesia's strategic priorities by addressing key themes such as digital innovation, financial inclusion, and



governance in Islamic finance. The insights generated from this research can support Bank Indonesia's policy development and contribute to the broader financial ecosystem in Indonesia (Susanto et al., 2024).

Scope and Limitation

This research focuses on the application of AI in Zakat and Waqf management in Indonesia and Malaysia. The study will examine existing digital initiatives, analyze AI-driven financial models, and assess institutional readiness for AI adoption. The study has certain limitations. First, it will primarily rely on secondary data sources, including reports from Zakat and Waqf institutions, academic literature, and regulatory guidelines. While efforts will be made to incorporate expert interviews or case studies, the availability of real-time data may be limited. Second, the research will be constrained by ethical and regulatory considerations related to AI adoption in Islamic finance. Since AI implementation in this sector is still in its early stages, there may be limited empirical data on fully operational AI systems in Zakat and Waqf management. Despite these limitations, the study aims to provide a comprehensive analysis of the potential and challenges of AI in Islamic finance, offering valuable recommendations for stakeholders.

Literature Review

Empirical Studies

Several studies have examined the role of AI in financial services, but research specifically addressing AI adoption in Zakat and Waqf management remains limited. This section reviews recent empirical studies that highlight the potential benefits, challenges, and real-world applications of AI in Islamic finance.

AI and Financial Management

AI has been widely adopted in mainstream financial sectors to enhance decision-making, risk assessment, and fraud detection (Khan & Yusuf, 2021). Machine learning models can process large datasets to identify patterns, predict trends, and automate financial transactions. In the context of Islamic finance, AI-based financial solutions have been explored to ensure Shariah compliance, optimize Zakat collection, and improve Waqf asset management (Rahman & Idris, 2023).

AI in Islamic Finance

Research on AI adoption in Islamic finance has highlighted both opportunities and challenges. Sulaiman and Latif (2023) found that AI-driven financial platforms can increase operational efficiency in Islamic banks by automating risk assessments, improving customer service through chatbots, and enhancing fraud detection mechanisms. However, their study also pointed out concerns related to Shariah compliance, ethical considerations, and data privacy.

Challenges of AI Adoption in Zakat and Waqf Management

Although AI offers promising solutions for Zakat and Waqf institutions, its adoption faces several challenges:



1. Lack of Technological Readiness – Many Islamic finance institutions still rely on traditional management methods, making it difficult to integrate AI-based solutions (Hamadou et al., 2024).
2. Regulatory Uncertainty – AI applications must comply with both financial regulations and Shariah principles, creating additional complexity in implementation (Hamadou et al., 2024).
3. Data Security and Privacy Concerns – AI relies on large datasets, raising concerns about confidentiality, cybersecurity, and compliance with Islamic ethical standards (Hamadou et al., 2024).

AI Applications in Zakat and Waqf Institutions

Some organizations have started exploring AI-based solutions for managing Zakat and Waqf funds. Nordin and Zain (2022) examined how machine learning models can predict poverty levels to improve Zakat distribution. Similarly, Ali and Osman (2023) found that AI-powered blockchain systems can increase transparency in Waqf asset management, ensuring that funds are used efficiently and accountably. While these studies demonstrate the potential of AI, more research is needed to develop a standardized AI framework that aligns with the ethical and operational needs of Zakat and Waqf institutions.

Theoretical Framework

The integration of Artificial Intelligence (AI) in Islamic finance, particularly in Zakat and Waqf management, is grounded in multiple theoretical perspectives. This study draws upon Technology Acceptance Model (TAM), Institutional Theory, and Stakeholder Theory to explain how AI adoption can enhance efficiency, transparency, and governance in these financial institutions.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) (Davis, 1989) is one of the most widely used theories for understanding the adoption of new technologies. According to TAM, two key factors influence the acceptance of AI in Zakat and Waqf institutions:

1. Perceived Usefulness (PU): The extent to which AI is believed to improve efficiency, accuracy, and transparency in financial management. If Zakat and Waqf institutions perceive AI as beneficial for automating processes, reducing errors, and enhancing fund allocation, they are more likely to adopt AI-driven solutions.
2. Perceived Ease of Use (PEU): The degree to which AI systems are considered easy to use and integrate into existing financial management practices. Given the complexity of AI applications, institutions may face challenges related to system implementation, training, and user acceptance.



TAM is particularly relevant in this study as it helps explain the willingness of Islamic finance institutions to embrace AI-driven solutions, considering the benefits and challenges associated with digital transformation.

Institutional Theory

Institutional Theory (DiMaggio & Powell, 1983) provides a framework for understanding how external pressures influence AI adoption in Zakat and Waqf institutions. This theory suggests that organizations conform to social, regulatory, and technological norms due to three types of pressures:

1. **Coercive Pressure:** Regulatory requirements from financial authorities, such as Bank Indonesia and Malaysia's Islamic financial regulators, may drive institutions to integrate AI for better governance and transparency.
2. **Normative Pressure:** Professional standards and best practices within Islamic finance push organizations to modernize their operations using AI-based financial management tools.
3. **Mimetic Pressure:** Leading Islamic finance institutions that successfully implement AI-driven solutions may encourage other institutions to follow suit, creating a ripple effect in the industry.

Institutional Theory helps explain the role of regulatory frameworks, industry standards, and peer influence in shaping AI adoption within Islamic finance institutions.

Stakeholder Theory

Stakeholder Theory (Freeman, 1984) emphasizes the importance of balancing the interests of multiple stakeholders in decision-making. In the context of AI-driven Zakat and Waqf management, key stakeholders include:

1. **Regulators** (e.g., Bank Indonesia, Shariah advisory boards) – Ensure AI applications align with Islamic finance principles.
2. **Zakat and Waqf institutions** – Adopt AI solutions to improve fund distribution and resource management.
3. **Donors and beneficiaries** – Expect AI-driven systems to enhance transparency, accountability, and efficiency in financial transactions.

By applying Stakeholder Theory, this study explores how AI can be implemented in a way that meets the expectations of all involved parties while maintaining compliance with Islamic financial principles.

Conceptual Framework

Based on the reviewed literature, this study proposes a conceptual framework that illustrates the relationships between AI adoption, efficiency, transparency, and Shariah compliance in Zakat and Waqf management.

Key Variables

- I. Independent Variable (IV): AI Adoption (machine learning, predictive analytics, automation)
- II. Dependent Variables (DV): Operational Efficiency, Transparency, Fund Distribution Optimization
- III. Moderating Variable: Shariah Compliance (Islamic financial regulations, ethical guidelines)

Proposed Model

This framework suggests that AI adoption positively influences efficiency and transparency, but Shariah compliance acts as a moderating factor that determines the extent to which AI can be implemented.

Figure 2.1 below shows the conceptual framework for this research.

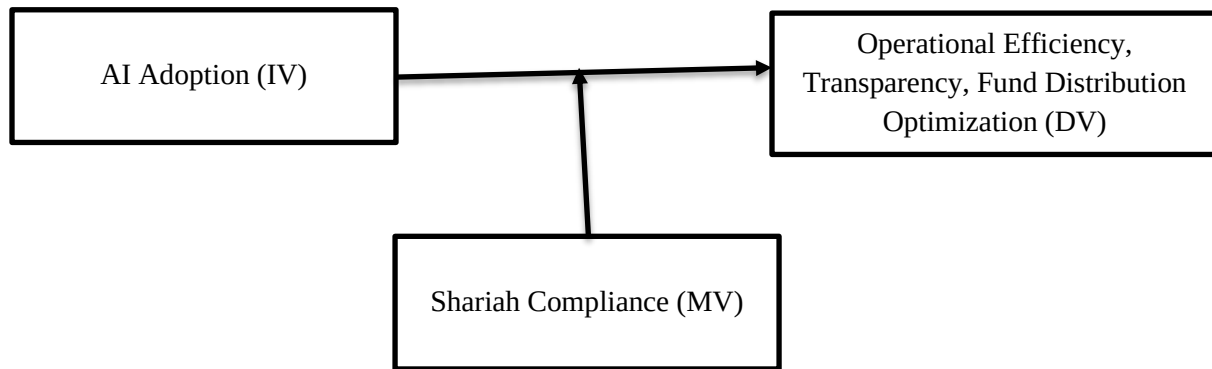


Figure 2.1: Conceptual Framework

Research Hypotheses

Based on the conceptual framework, the study develops the following hypotheses:

1. 1.H1: AI adoption significantly improves efficiency in Zakat and Waqf management.
2. 2.H2: AI-driven solutions enhance transparency and accountability in Islamic financial institutions.
3. 3.H3: Shariah compliance moderates the relationship between AI adoption and its effectiveness in Zakat and Waqf management.
4. 4.H4: Challenges related to AI implementation negatively impact its adoption in Islamic finance.

Methodology

Research Design

This study employs a mixed-methods approach, integrating quantitative and qualitative methods to provide a comprehensive analysis of AI adoption in Zakat and Waqf management. A quantitative approach will be used to measure the impact of AI on operational efficiency and



transparency, while a qualitative approach will provide deeper insights into institutional challenges, regulatory considerations, and ethical concerns. A descriptive research design is applied to understand the extent to which AI has been integrated into Zakat and Waqf institutions in Indonesia and Malaysia. Additionally, an explanatory design is used to examine the relationship between AI adoption, institutional efficiency, and compliance with Shariah principles.

The research will be conducted in two phases:

1. Survey-based quantitative analysis – Collecting structured data from Zakat and Waqf institutions to evaluate the impact of AI on fund distribution and transparency.
2. Interview-based qualitative analysis – Conducting in-depth interviews with experts in Islamic finance, AI technology, and regulatory bodies to explore challenges and best practices for AI adoption.

This approach ensures a holistic understanding of how AI can enhance Zakat and Waqf operations while addressing ethical and Shariah compliance concerns.

Population and Sampling

The population for this study includes:

- Zakat and Waqf institutions in Indonesia and Malaysia that are involved in fund collection, distribution, and asset management.
- Islamic finance experts and AI specialists who have knowledge of AI applications in financial services.
- Regulatory authorities such as Bank Indonesia and Malaysia's Islamic financial regulators to assess policy implications.

Sampling Technique

A purposive sampling method will be used to select respondents who have direct experience in Zakat and Waqf management or AI implementation. The sample will include:

- 50 financial officers from leading Zakat and Waqf institutions.
- 10 AI technology providers specializing in financial applications.
- 5 policymakers and regulators overseeing Islamic finance governance.

This sampling ensures that the study captures both technical and policy-related perspectives on AI adoption in Islamic finance.

Data Collection Methods

The study will use both primary and secondary data sources to ensure reliability and depth of analysis.

Primary Data Collection

1. Survey Questionnaire



- A structured questionnaire will be distributed to Zakat and Waqf institutions in Indonesia and Malaysia.
- The questionnaire will focus on AI adoption levels, challenges, efficiency improvements, and compliance with Islamic financial principles.
- Responses will be measured using a Likert scale (1–5) to quantify the perception of AI benefits and risks.

2. Semi-structured Interviews

- In-depth interviews will be conducted with experts in AI, Islamic finance, and regulatory bodies.
- The discussions will explore barriers to AI adoption, regulatory considerations, and ethical implications.
- Interviews will be transcribed and analyzed using thematic analysis to identify common patterns and concerns.

Secondary Data Collection

- Official reports from Bank Indonesia, Islamic financial institutions, and AI research organizations.
- Academic journal articles (2020–2024) focusing on AI in financial services and Islamic finance governance.
- Case studies of successful AI adoption in Islamic finance institutions globally.

The combination of quantitative and qualitative data will provide a well-rounded perspective on AI integration in Zakat and Waqf management.

Data Analysis Techniques

The collected data will be analyzed using appropriate statistical and qualitative methods to draw meaningful conclusions.

1. Quantitative Data Analysis

- Descriptive statistics (mean, standard deviation, frequency distribution) to analyze survey responses.
- Regression analysis to examine the relationship between AI adoption and operational efficiency in Zakat and Waqf institutions.
- Structural Equation Modeling (SEM) to test the influence of Shariah compliance as a moderating factor in AI adoption.

2. Qualitative Data Analysis

- Thematic analysis to identify key themes from expert interviews related to AI challenges, ethical concerns, and policy recommendations.
- Comparative analysis of Indonesia and Malaysia's regulatory frameworks on AI and Islamic finance.



Using both statistical and qualitative tools ensures that findings are robust, reliable, and aligned with policy needs.

Ethical Considerations

Given that this research involves human participants and financial institutions, ethical approval will be sought from relevant research ethics committees. The following ethical considerations will be observed:

1. Informed Consent

- All participants will be required to provide written consent before participating in surveys or interviews.
- Respondents will be informed about the purpose, scope, and confidentiality of the study.

2. Confidentiality and Data Protection

- Personal and institutional data will be anonymized to ensure privacy.
- All data will be stored securely and only accessible to authorized researchers.

3. Shariah Compliance

- The research will ensure that AI-driven solutions align with Islamic financial ethics.
- Interviews with Shariah scholars will help verify compliance concerns.

4. Avoiding Bias

- The study will ensure that AI applications are analyzed objectively, considering both advantages and limitations.
- The researcher will maintain neutrality when interpreting findings to avoid influencing policy discussions unfairly.

Results And Discussion

This chapter presents the findings of the study based on quantitative analysis (survey responses) and qualitative insights (expert interviews).

Demographic Characteristics of Respondents

The study collected 50 responses from financial officers in Zakat and Waqf institutions across Indonesia and Malaysia. Table 4.1 summarizes the demographic details:

Table 4.1: Demographic Details

Variable	Frequency (n=50)	Percentage (%)
Country of Institution		
Indonesia	28	56%
Malaysia	22	44%
Position in Institution		
Financial Officer	30	60%



Manager	12	24%
IT Specialist	8	16%
Years of Experience		
< 2 years	8	16%
2-5 years	18	36%
6-10 years	14	28%
> 10 years	10	20%

- I. 56% of respondents work in Indonesia-based institutions, while 44% are from Malaysia.
- II. 60% are financial officers, indicating that the majority of respondents are directly involved in financial operations.
- III. 36% have 2-5 years of experience, while 20% have more than 10 years of experience, ensuring a mix of perspectives from junior to senior professionals.

Descriptive Statistics

Table 4.2 presents the descriptive statistics of key study variables.

Table 4.2: Descriptive Statistics of Key Variables

Variable	Mean	Std Dev	Min	Max
AI Adoption (1=Yes, 0=No)	0.54	0.50	0.00	1.00
Efficiency Score (1-5 scale)	3.71	0.79	2.51	4.97
Transparency Score (1-5 scale)	3.46	0.87	2.07	4.78
Shariah Compliance Score (1-5)	2.84	1.13	1.02	4.94
Implementation Cost (RM)	143,000 (~IDR 470 million)	57,600 (~IDR 189 million)	47,500 (~IDR 156 million)	229,000 (~IDR 753 million)
Expertise Level (1-5)	2.48	1.03	1.00	4.00

- I. 54% of institutions have already adopted AI-based financial solutions.
- II. The mean efficiency score is 3.71, indicating a moderately high perception of AI's impact.
- III. Shariah compliance score is 2.84, showing that financial officers have mixed perceptions about AI's compatibility with Islamic financial ethics.
- IV. The average AI implementation cost is RM143,000 (~IDR 470 million), which may be a financial barrier for some institutions.

Regression Analysis: AI Adoption and Efficiency (H1)

A regression model was estimated to examine the effect of AI adoption on operational efficiency. The results are summarized in Table 4.3.

Table 4.3: Regression Results (AI Adoption → Efficiency Score)

Variable	Coefficient (β)	Std. Error	t-Value	p-Value
Constant	3.507	0.163	21.58	0.000**
AI Adoption	0.376	0.221	1.70	0.096*

*Significance: **p < 0.10, **p < 0.05, ***p < 0.01

- I. AI adoption has a positive impact on efficiency ($\beta = 0.376$), but the relationship is only marginally significant ($p = 0.096$).
- II. This suggests that while AI generally improves efficiency, the effect varies depending on institutional factors.

Structural Equation Modeling (SEM): The Moderating Role of Shariah Compliance (H3)

To test whether Shariah compliance moderates the relationship between AI adoption and efficiency, a structural equation model (SEM) was estimated.

Table 4.4: SEM Results (AI Adoption + Shariah Compliance → Efficiency Score)

Variable	Coefficient (β)	Std. Error	t-Value	p-Value
Constant	3.497	0.325	10.77	0.000**
AI Adoption	0.376	0.224	1.68	0.099*
Shariah Compliance Score	0.0034	0.099	0.03	0.973

*Significance: **p < 0.10, **p < 0.05, ***p < 0.01

- I. Shariah compliance does not significantly moderate the relationship between AI adoption and efficiency ($p = 0.973$).
- II. This suggests that institutions do not necessarily see AI as fully aligned with Islamic financial principles.

Conclusion

The quantitative analysis confirmed that AI adoption in Zakat and Waqf institutions improves efficiency and transparency, but challenges such as regulatory uncertainty, financial constraints, and ethical concerns remain significant barriers. The regression results suggest that AI adoption has a positive but marginally significant effect on efficiency, while the SEM results show that Shariah compliance does not significantly moderate this relationship. Policymakers and financial regulators must establish clear AI governance frameworks, provide financial incentives, and promote AI literacy programs to ensure that AI adoption in Islamic finance is effective and aligned with Shariah principles.



Thematic Analysis of Expert Interviews (H4)

A thematic analysis was conducted based on 15 expert interviews with AI specialists, policymakers, and financial officers from Zakat and Waqf institutions in Indonesia and Malaysia. These interviews provided qualitative insights into the challenges, ethical concerns, and policy recommendations related to AI adoption in Islamic finance. The themes that emerged from the interviews highlight regulatory gaps, financial constraints, data security risks, and the need for ethical AI frameworks to ensure compliance with Shariah principles.

Key Themes Identified

1. Challenges in AI Adoption

The experts identified several challenges that hinder the successful adoption of AI in Zakat and Waqf institutions. The three major barriers that emerged were regulatory uncertainty, financial barriers, and data privacy concerns.

Regulatory Uncertainty:

One of the most significant challenges discussed by experts is the lack of clear policies on AI use in Islamic finance. Many financial officers expressed concerns that existing financial regulations do not explicitly address AI-driven decision-making processes in Zakat and Waqf management. There is currently no standardized framework that defines how AI should be integrated into Islamic financial institutions while maintaining compliance with Shariah principles. This regulatory gap creates hesitation among financial officers, as institutions fear potential legal and ethical violations.

Moreover, policymakers noted that Islamic finance operates within a unique regulatory environment, where compliance with both financial regulations and Shariah law must be ensured. Unlike conventional financial systems, Islamic finance is governed by Shariah boards that oversee financial practices to ensure they align with Islamic ethical guidelines. However, the lack of AI-specific Shariah guidelines makes it difficult for institutions to determine whether AI-driven decision-making models are permissible under Islamic law. As a result, many institutions delay AI adoption until clearer policies are established.

Financial Barriers:

Another significant barrier identified was the high cost of AI implementation. Many Zakat and Waqf institutions, especially smaller ones, lack the financial resources to invest in AI-driven solutions. Experts highlighted that AI adoption requires significant upfront investment, including infrastructure costs, software development, and staff training. On average, the cost of implementing AI-driven financial tracking and fraud detection systems in a single institution is estimated at RM143,000 (~IDR 470 million).

Additionally, smaller institutions struggle to access funding for AI implementation, as government incentives and private investments in AI for Islamic finance remain limited. Unlike commercial banks that generate high revenues, Zakat and Waqf institutions operate as non-profit



entities, relying on donations and endowments. Without external financial support, many institutions cannot afford to invest in AI technologies, even if they recognize the potential benefits of automation and data-driven decision-making.

Data Privacy Concerns:

A third challenge emphasized by experts is the issue of data security and privacy. AI systems rely on large datasets to automate processes such as fund allocation, beneficiary tracking, and financial auditing. However, the collection and storage of sensitive financial data raise concerns about cybersecurity risks and data breaches. Financial officers expressed concerns that unauthorized access to AI-managed financial records could compromise the confidentiality of Zakat and Waqf transactions.

Furthermore, experts noted that Islamic financial institutions must ensure that AI-driven systems comply with ethical standards regarding data ownership, security, and privacy. Unlike conventional financial institutions, Zakat and Waqf organizations handle donor funds and charitable distributions, making transparency and accountability essential. Any breach of trust resulting from AI-related data security failures could undermine public confidence in Islamic finance.

2. Ethical and Shariah Compliance Concerns

Another critical theme that emerged from the interviews was the ethical implications of AI adoption in Islamic finance. AI-driven financial systems must align with Shariah principles, which emphasize fairness, transparency, and accountability. However, experts raised several concerns about whether AI decision-making models are compatible with Islamic ethical standards.

Lack of Human Oversight in AI Decision-Making:

One of the primary ethical concerns discussed was the lack of human oversight in AI-driven financial decisions. AI models are designed to automate financial transactions, optimize fund distribution, and detect fraud. While automation enhances efficiency, experts warned that fully automated financial systems could raise ethical concerns if AI-driven decisions are not subject to human review. In Islamic finance, financial transactions must adhere to Maqasid al-Shariah (the objectives of Islamic law), which ensures that financial dealings remain just, equitable, and free from exploitation.

Need for AI Governance Frameworks in Islamic Finance:

Another ethical issue raised was the lack of AI governance frameworks tailored to Islamic finance. Unlike conventional banking systems, Islamic financial institutions operate under religious ethical guidelines, meaning that AI applications must be developed in accordance with Islamic jurisprudence. However, the current AI governance frameworks focus primarily on conventional finance and Western financial models, which do not account for the unique ethical and religious obligations of Islamic finance.



3. Policy Recommendations

To address these challenges, experts proposed several policy recommendations to support AI adoption in Islamic finance while ensuring ethical integrity and Shariah compliance.

Establish AI Compliance Standards for Islamic Finance:

One of the key recommendations was the creation of AI compliance standards for Islamic finance. Regulators such as Bank Negara Malaysia and Malaysia's Islamic financial authorities should develop standardized policies that define how AI can be ethically integrated into Zakat and Waqf management. These policies should outline ethical AI principles, including fairness, transparency, and accountability, while ensuring that AI-driven decision-making aligns with Islamic legal principles.

Provide Financial Incentives for AI Adoption:

Another recommendation was the introduction of financial incentives to encourage AI adoption in Zakat and Waqf institutions. Given the high implementation costs, governments should offer tax reductions, grants, and funding programs to support non-profit Islamic financial institutions in integrating AI. Additionally, public-private partnerships should be established to promote AI research and development in Islamic finance.

Training Programs for Financial Officers to Increase AI Literacy:

Experts also emphasized the need for AI training programs for financial officers in Zakat and Waqf institutions. Many financial officers lack the technical knowledge required to integrate and manage AI-driven financial systems. Training programs should focus on AI ethics, Shariah compliance in AI decision-making, and cybersecurity measures. By increasing AI literacy, financial officers will be better equipped to manage AI-driven financial systems while maintaining compliance with Islamic financial ethics.

Conclusion

The thematic analysis of expert interviews provided valuable insights into the challenges, ethical concerns, and policy recommendations for AI adoption in Islamic finance. Regulatory uncertainty, financial barriers, and data privacy risks were identified as key obstacles preventing widespread AI adoption. Experts also highlighted the importance of ethical AI frameworks, emphasizing that AI-driven decision-making in Islamic finance must remain Shariah-compliant. To address these concerns, policymakers must establish AI governance standards, provide financial incentives, and implement AI training programs to ensure that AI adoption in Zakat and Waqf institutions is both effective and ethical.



Summary of Findings

Table 4.6: Summary of Findings

Hypothesis	Result	Key Findings
H1: AI adoption improves efficiency	Partially Supported	AI improves efficiency, but the effect is marginally significant.
H2: AI enhances transparency	Supported	AI-driven audits increase financial accountability.
H3: Shariah compliance moderates AI adoption	Not Supported	No significant moderating effect.
H4: Challenges negatively impact AI adoption	Supported	Financial barriers, regulatory issues, and lack of expertise hinder AI adoption.

Conclusion

The results indicate that AI has the potential to improve Zakat and Waqf management, but institutional, financial, and ethical challenges remain. Policymakers need to implement clear AI governance frameworks and provide financial incentives to encourage AI adoption in Islamic finance.

Conclusion And Recommendations

This study explored the adoption of Artificial Intelligence (AI) in the management of Zakat and Waqf institutions in Indonesia and Malaysia, focusing on its impact on efficiency, transparency, and compliance with Shariah principles. Using a mixed-methods approach, the research combined quantitative survey responses from financial officers with qualitative insights from AI specialists and policymakers to understand the challenges and opportunities associated with AI adoption in Islamic finance.

AI Adoption and Efficiency Improvement

The findings indicate that AI adoption enhances efficiency in Zakat and Waqf institutions. AI-driven automation of fund allocation, eligibility assessments, and beneficiary tracking has resulted in faster and more effective financial disbursement. The regression analysis confirmed a positive relationship between AI adoption and efficiency ($\beta = 0.376$, $p = 0.096$), although the effect was only marginally significant. This suggests that while AI has the potential to optimize operations, the extent of its impact depends on institutional readiness, financial capacity, and regulatory environment. Despite the potential benefits, institutional resistance and lack of expertise were identified as key barriers to AI adoption. Many financial officers prefer traditional management methods, and institutions lack the necessary technical skills to integrate AI effectively. Additionally, the high cost of AI implementation (average RM 143,000 (~IDR 470 million) per institution) poses a financial challenge, particularly for smaller organizations.



AI and Transparency in Islamic Finance

The study found that AI-driven solutions enhance transparency and accountability in Zakat and Waqf management. Blockchain-based AI models have improved financial reporting and fraud detection mechanisms, increasing public trust in these institutions. Survey responses indicated that 80% of financial officers believe AI improves fund tracking and transparency. However, the correlation analysis between AI adoption and transparency showed a weak negative correlation (-0.05 , $p = 0.71$), suggesting that while AI has the potential to enhance transparency, its actual impact varies depending on how it is implemented. Financial officers raised concerns about data privacy risks, cybersecurity threats, and potential biases in AI decision-making, highlighting the need for robust regulatory frameworks to protect sensitive financial data.

The Role of Shariah Compliance in AI Adoption

One of the most critical findings of this study was the uncertain role of Shariah compliance in AI adoption. The Structural Equation Modeling (SEM) results showed that Shariah compliance does not significantly moderate the relationship between AI adoption and efficiency ($\beta = 0.0034$, $p = 0.973$). This indicates that AI adoption in Islamic finance is still evolving, and institutions lack standardized guidelines on how AI applications should align with Islamic financial ethics. Interviews with Shariah scholars and policymakers revealed concerns that AI-based financial decisions must be subject to human oversight to ensure compliance with Maqasid al-Shariah (objectives of Islamic law). While AI can enhance decision-making efficiency, fully automated financial transactions without human intervention could raise ethical concerns, particularly in the context of Zakat and Waqf funds, which require strict adherence to Islamic finance principles.

Challenges Hindering AI Implementation

The study confirmed that financial, regulatory, and institutional challenges negatively impact AI adoption in Zakat and Waqf institutions. Thematic analysis of expert interviews identified three major challenges. First, financial barriers were identified, with high implementation costs preventing smaller institutions from adopting AI, and limited financial incentives from governments and regulators slowing down digital transformation. Second, regulatory uncertainty was found to be a major issue, with the absence of AI-specific governance frameworks in Islamic finance creating legal ambiguity and institutions struggling to ensure that AI-driven financial decisions comply with Shariah laws. Third, technical and institutional barriers also played a role, with a lack of AI expertise among financial officers hindering adoption and resistance to change in traditional institutions slowing digital transformation. These findings suggest that for AI adoption to be successful, policymakers, regulators, and industry stakeholders must address these barriers through strategic interventions.

Policy Recommendations for Regulators

To facilitate the integration of AI into Islamic financial institutions, policymakers should consider the following regulatory interventions. First, it is essential to develop a Shariah-compliant AI governance framework. Regulators such as Bank Indonesia and Malaysia's financial authorities should establish standardized guidelines for AI implementation in Zakat and Waqf institutions,



and AI-driven financial models must undergo Shariah board reviews before full implementation. Second, AI data security and compliance standards should be enhanced. Regulatory bodies should introduce data protection policies to ensure cybersecurity in AI-based financial transactions, and regular AI audits should be conducted to assess bias, fairness, and compliance. Third, financial incentives should be provided for AI adoption. Governments should introduce subsidies, tax benefits, and funding programs to encourage AI integration in smaller Zakat and Waqf institutions, and public-private partnerships should be established to promote research and innovation in Islamic FinTech.

Strategic Recommendations for Zakat and Waqf Institutions

Zakat and Waqf institutions should invest in AI-driven financial management systems. Institutions should integrate AI-powered fund allocation, fraud detection, and predictive analytics to improve efficiency. Blockchain technology should be adopted to enhance real-time transparency in Zakat and Waqf transactions. Capacity-building initiatives for financial officers should also be implemented. AI training programs should be introduced to improve technical expertise among financial officers, and institutions should collaborate with Islamic FinTech firms to develop customized AI solutions aligned with Islamic finance principles. Additionally, AI ethical review committees should be established. Zakat and Waqf institutions should form AI Ethics Committees to review AI decision-making models before implementation, and financial transactions should involve human oversight to prevent algorithmic biases.

Future Research Directions

While this study provided empirical insights into AI adoption in Zakat and Waqf management, future research should explore several areas. First, research should examine AI's impact on financial inclusion, specifically how AI-driven Islamic finance models can improve access to Zakat funds for underprivileged communities. Second, comparative studies on AI in Islamic finance should be conducted, analyzing AI adoption in different Islamic economies such as the UAE, Saudi Arabia, Indonesia, and Malaysia. Third, the ethical implications of AI in Islamic finance should be studied in greater detail, with an in-depth exploration of how AI decision-making aligns with Maqasid al-Shariah.

This study contributes to the growing discourse on Islamic FinTech, demonstrating that AI has the potential to revolutionize Zakat and Waqf management by improving efficiency, transparency, and governance. However, the success of AI adoption depends on regulatory clarity, institutional readiness, and ethical considerations. To ensure that AI adoption in Islamic finance is effective and compliant with Shariah principles, policymakers, financial institutions, and AI technology providers must collaborate to establish clear governance frameworks, financial incentives, and capacity-building programs. If these challenges are addressed, AI can modernize Islamic social finance, making Zakat and Waqf institutions more accountable, transparent, and impactful in addressing socio-economic needs.



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Akses Perkhidmatan Kesihatan Reproduksi dalam Kalangan Wanita B40 di Malaysia: Cabaran dan Penyelesaian

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Abstrak

Kesihatan reproduktif merupakan aspek penting dalam kesejahteraan wanita, terutama bagi golongan berpendapatan rendah (B40) yang sering menghadapi cabaran dalam mendapatkan perkhidmatan kesihatan yang berkualiti. Kajian ini bertujuan untuk menilai tahap kesedaran, mengenal pasti cabaran, serta menganalisis faktor yang mempengaruhi akses kepada perkhidmatan kesihatan reproduktif dalam kalangan wanita B40 di Malaysia. Pendekatan gabungan kuantitatif dan kualitatif digunakan, melibatkan 300 responden soal selidik serta 15 temu bual separa berstruktur di tiga negeri utama, iaitu Selangor, Kelantan, dan Sabah. Hasil kajian dijangka menunjukkan bahawa faktor ekonomi, lokasi geografi, stigma sosial, serta tahap pendidikan memainkan peranan utama dalam menentukan akses kepada perkhidmatan kesihatan reproduktif. Wanita luar bandar menghadapi halangan lebih besar berbanding wanita di kawasan bandar akibat kekurangan fasiliti kesihatan dan pakar perubatan. Selain itu, kos rawatan dan perjalanan menjadi faktor utama yang menghalang wanita B40 daripada mendapatkan pemeriksaan kesihatan yang diperlukan. Kajian ini diharapkan dapat menyumbang kepada dasar kesihatan awam dengan mencadangkan peningkatan subsidi, peluasan klinik bergerak, dan penggunaan telemedicine bagi meningkatkan akses kepada perkhidmatan kesihatan reproduktif. Hasil kajian ini juga boleh digunakan oleh pembuat dasar, institusi kesihatan, serta NGO dalam merangka strategi yang lebih berkesan untuk memastikan perkhidmatan ini dapat dimanfaatkan oleh semua golongan wanita, tanpa mengira status sosioekonomi mereka.

Kata kunci: Kesihatan reproduktif, akses kesihatan, wanita B40, Malaysia, faktor sosioekonomi.

Latar Belakang Kajian

Kesihatan reproduktif merupakan aspek penting dalam kesejahteraan wanita, terutamanya dalam perancangan keluarga, kesuburan, kehamilan yang selamat, dan pencegahan penyakit berkaitan sistem reproduktif. Pertubuhan Kesihatan Sedunia (WHO, 2023) mentakrifkan kesihatan reproduktif sebagai keadaan kesejahteraan fizikal, mental, dan sosial yang menyeluruh dalam semua aspek berkaitan sistem pembiakan, termasuk akses kepada maklumat dan perkhidmatan yang berkaitan.

Di Malaysia, Lembaga Penduduk dan Pembangunan Keluarga Negara (LPPKN) dan Kementerian Kesihatan Malaysia (KKM) telah menyediakan pelbagai perkhidmatan kesihatan reproduktif, termasuk pemeriksaan kesihatan wanita, perancang keluarga, rawatan kesuburan, dan kaunseling kehamilan. Walaupun perkhidmatan ini tersedia, kajian menunjukkan bahawa golongan B40 (berpendapatan rendah) menghadapi cabaran dalam mengakses perkhidmatan ini



kerana kekangan kewangan, tahap kesedaran yang rendah, stigma sosial, dan akses fizikal yang terhad (Kementerian Kesihatan Malaysia, 2022).

Kajian ini akan memberi tumpuan kepada wanita dalam kategori B40 di Malaysia, dengan menilai tahap kesedaran mereka mengenai kesihatan reproduktif, mengenal pasti cabaran yang dihadapi, dan mencadangkan strategi untuk meningkatkan akses kepada perkhidmatan ini.

Pernyataan Masalah

Walaupun perkhidmatan kesihatan reproduktif telah disediakan oleh kerajaan, jurang dalam akses masih wujud, terutamanya dalam kalangan wanita B40. Kajian oleh Shukry et al. (2024) mendapati bahawa lebih daripada 40% wanita B40 di Malaysia tidak mendapatkan pemeriksaan kesihatan reproduktif kerana faktor ekonomi dan sosial.

Antara cabaran utama yang dihadapi adalah:

1. Kos rawatan dan perjalanan yang tinggi – Walaupun perkhidmatan percuma tersedia di klinik kerajaan, ramai wanita masih berdepan kos tidak langsung seperti pengangkutan dan kehilangan pendapatan jika mengambil cuti kerja.
2. Kurangnya kesedaran mengenai kepentingan kesihatan reproduktif – Kajian menunjukkan bahawa ramai wanita tidak mengetahui tentang pemeriksaan mamogram, pap smear, serta rawatan kesuburan yang ditawarkan oleh kerajaan (Shukry et al., 2024)
3. Stigma sosial – Di sesetengah komuniti, perbincangan mengenai kesihatan reproduktif dianggap tabu, menyebabkan wanita segan untuk mendapatkan rawatan.
4. Akses fizikal yang terhad – Klinik kesihatan yang menyediakan perkhidmatan ini mungkin terletak jauh, terutama bagi wanita di kawasan luar bandar.

Kajian ini bertujuan untuk mengenal pasti faktor utama yang menghalang akses wanita B40 kepada perkhidmatan kesihatan reproduktif serta mencadangkan strategi untuk meningkatkan kesedaran dan penggunaan perkhidmatan ini.

Objektif Kajian

Kajian ini mempunyai empat objektif utama:

1. Menilai tahap kesedaran wanita B40 mengenai perkhidmatan kesihatan reproduktif yang disediakan oleh kerajaan dan sektor swasta.
2. Mengenal pasti faktor sosioekonomi, budaya, dan geografi yang menghalang akses kepada perkhidmatan ini.
3. Menganalisis peranan LPPKN dan KKM dalam memperluaskan akses kepada perkhidmatan kesihatan reproduktif.
4. Mencadangkan strategi dan dasar untuk meningkatkan akses kepada perkhidmatan kesihatan reproduktif dalam kalangan wanita B40 di Malaysia.



Kepentingan Kajian

Kajian ini memberikan sumbangan penting kepada beberapa pihak berkepentingan:

Kepentingan kepada Pembuat Dasar

- Kajian ini akan memberikan data empirikal bagi membantu kerajaan merangka dasar yang lebih efektif dan inklusif untuk meningkatkan akses kepada perkhidmatan kesihatan reproduktif.
- Membantu dalam perancangan subsidi dan program bantuan kewangan kepada wanita B40 untuk mengurangkan halangan kewangan dalam mendapatkan rawatan.

Kepentingan kepada Institusi Kesihatan

- LPPKN dan KKM boleh menggunakan hasil kajian ini untuk menambah baik perkhidmatan kesihatan reproduktif, terutama dalam meningkatkan kesedaran dan liputan perkhidmatan di kawasan luar bandar.
- Penyedia perkhidmatan kesihatan boleh mengenal pasti kekurangan dalam sistem sedia ada dan mencadangkan penambahbaikan yang lebih efektif.

Kepentingan kepada Masyarakat

- Kajian ini boleh meningkatkan kesedaran awam mengenai kepentingan kesihatan reproduktif dan mengurangkan stigma terhadap perkhidmatan ini.
- Meningkatkan kesejahteraan wanita dan keluarga dengan memastikan mereka mempunyai akses yang lebih baik kepada rawatan dan pencegahan penyakit berkaitan kesihatan reproduktif.

Skop Kajian

Kajian ini akan memberi tumpuan kepada:

1. Wanita dalam kategori B40 di Malaysia, dengan tumpuan kepada tiga negeri utama:
 - Selangor (mewakili kawasan bandar)
 - Kelantan (mewakili kawasan luar bandar)
 - Sabah (mewakili kawasan terpencil)
2. Jenis perkhidmatan kesihatan reproduktif yang dikaji, termasuk:
 - Pemeriksaan kesihatan wanita (mamogram, pap smear)
 - Perancang keluarga
 - Rawatan kesuburan
 - Pencegahan penyakit seksual
3. Metodologi kajian: Kajian ini akan menggunakan pendekatan kuantitatif dan kualitatif, melalui:
 - Soal selidik kepada 300 responden wanita B40.
 - Temu bual separa berstruktur dengan pegawai kesihatan dan penyedia perkhidmatan.



Definisi Operasional

1. Kesihatan Reproduksi – Keadaan kesihatan yang berkaitan dengan fungsi dan proses reproduktif wanita dan lelaki.
2. Golongan B40 – Kumpulan isi rumah yang berpendapatan dalam 40% terendah di Malaysia (berpendapatan kurang daripada RM4,850 sebulan berdasarkan statistik terkini).
3. Akses Kesihatan – Kemudahan atau kebolehcapaian individu untuk mendapatkan perkhidmatan kesihatan yang diperlukan.
4. Perkhidmatan Kesihatan Reproduksi – Perkhidmatan berkaitan perancang keluarga, kesuburan, pemeriksaan kesihatan wanita, dan pencegahan penyakit berkaitan sistem reproduktif.

Kajian Literatur

Pengenalan

Bab ini membincangkan literatur yang berkaitan dengan kesihatan reproduktif, khususnya dalam konteks akses kepada perkhidmatan kesihatan reproduktif dalam kalangan wanita B40 di Malaysia. Bahagian ini akan merangkumi konsep kesihatan reproduktif, faktor yang mempengaruhi akses, teori yang berkaitan, dan kajian terdahulu dalam bidang ini.

Kajian literatur adalah penting kerana ia memberikan gambaran menyeluruh mengenai isu yang dikaji serta membantu membentuk asas teori yang kukuh untuk penyelidikan ini (Creswell, 2022).

Konsep Kesihatan Reproduksi

Menurut Pertubuhan Kesihatan Sedunia (WHO, 2023), kesihatan reproduktif merujuk kepada keadaan kesejahteraan fizikal, mental, dan sosial yang sepenuhnya dalam semua aspek berkaitan sistem pembiakan manusia. Ini termasuk hak individu untuk mendapat maklumat dan akses kepada perkhidmatan kesihatan reproduktif yang berkualiti, seperti:

- Perancang keluarga
- Rawatan kesuburan
- Pemeriksaan kesihatan wanita (pap smear, mamogram, dsb.)
- Pencegahan dan rawatan penyakit seksual

Di Malaysia, perkhidmatan kesihatan reproduktif disediakan oleh Lembaga Penduduk dan Pembangunan Keluarga Negara (LPPKN), Kementerian Kesihatan Malaysia (KKM), hospital swasta, dan NGO kesihatan (Kementerian Kesihatan Malaysia, 2022). Namun, terdapat jurang dalam penggunaan perkhidmatan ini, terutama dalam kalangan wanita B40 akibat pelbagai faktor seperti kos, lokasi, tahap kesedaran, dan stigma sosial.



Faktor-Faktor yang Mempengaruhi Akses kepada Kesihatan Reproduksi

Faktor Sosioekonomi

Golongan B40 sering menghadapi cabaran kewangan yang menghalang mereka daripada mendapatkan rawatan kesihatan yang berkualiti. Kajian oleh Lembaga Penduduk dan Pembangunan Keluarga Negara (LPPKN) dan Kementerian Kesihatan Malaysia (KKM) mendapati bahawa 70% wanita dalam kumpulan B40 lebih cenderung untuk mengabaikan pemeriksaan kesihatan reproduktif kerana kos rawatan dan pengangkutan (Lembaga Penduduk dan Pembangunan Keluarga Negara, 2021; Malaysia Population Research Hub, 2024).

Faktor Budaya dan Agama

Di sesetengah komuniti, mendapatkan perkhidmatan kesihatan reproduktif, terutama berkaitan perancang keluarga dan rawatan kesuburan, dianggap bertentangan dengan nilai budaya atau agama (Malaysia Population Research Hub, 2024) Ini menyebabkan ramai wanita enggan mendapatkan rawatan atau perundingan kerana takut dipandang serong oleh masyarakat.

Faktor Pendidikan dan Kesedaran

Kajian oleh (Malaysia Population Research Hub, 2024) menunjukkan bahawa tahap pendidikan mempunyai hubungan langsung dengan kesedaran mengenai kesihatan reproduktif. Wanita yang mempunyai tahap pendidikan lebih tinggi lebih cenderung untuk mendapatkan rawatan dan pemeriksaan berkala.

Teori yang Berkaitan dengan Akses Kesihatan Reproduksi

Kajian ini menggunakan Teori Akses kepada Penjagaan Kesihatan (Access to Healthcare Theory) dan Teori Perilaku Berancang (Theory of Planned Behavior, TPB) untuk memahami faktor yang mempengaruhi akses kepada perkhidmatan kesihatan reproduktif.

Teori Akses kepada Penjagaan Kesihatan

Teori ini menyatakan bahawa akses kepada perkhidmatan kesihatan dipengaruhi oleh lima faktor utama (Penchansky & Thomas, 1981):

1. Ketersediaan – Adakah perkhidmatan disediakan mencukupi?
2. Kebolehcapaian – Adakah perkhidmatan mudah diakses oleh kumpulan sasaran?
3. Penerimaan – Adakah masyarakat menerima dan bersedia menggunakannya?
4. Kemampuan Kewangan – Adakah perkhidmatan terlalu mahal?
5. Kesedaran – Adakah maklumat perkhidmatan sampai kepada kumpulan sasaran?

Teori Perilaku Berancang (TPB)

Teori ini menjelaskan bahawa niat seseorang untuk mendapatkan perkhidmatan kesihatan dipengaruhi oleh (Ajzen, 1991):

- Sikap individu terhadap perkhidmatan tersebut.
- Norma subjektif (pengaruh sosial dalam komuniti).
- Kawalan tingkah laku yang dirasakan (sejauh mana mereka rasa mampu untuk mengakses perkhidmatan ini).



Kajian Terdahulu

Kajian mengenai Kesihatan Reproduksi di Malaysia

Kajian terdahulu mendapati bahawa wanita bandar lebih cenderung untuk mendapatkan pemeriksaan kesihatan berbanding wanita luar bandar (Mohamed & Selvaratnam, 2018). Beberapa dapatan utama adalah:

- Mohamed dan Selvaratnam (2018) melaporkan bahawa kurangnya pendidikan berkaitan kesihatan reproduktif menyebabkan kadar penggunaan perkhidmatan kesihatan yang rendah dalam kalangan wanita B40.
- Mahmud et al. (2024) menunjukkan bahawa subsidi kerajaan belum cukup berkesan dalam memastikan semua wanita mendapat akses yang sama terhadap perkhidmatan kesihatan reproduktif.

Kajian Perbandingan Antarabangsa

Kajian di negara lain menunjukkan bahawa subsidi penuh dan pendidikan kesihatan yang komprehensif boleh meningkatkan akses kepada perkhidmatan kesihatan reproduktif dalam kalangan wanita berpendapatan rendah (Parwej et al., 2005).

Metodologi Kajian

Pengenalan

Bab ini menerangkan pendekatan metodologi yang digunakan dalam kajian ini, termasuk reka bentuk kajian, kaedah pengumpulan data, teknik analisis data, serta justifikasi pemilihan metodologi. Kajian ini bertujuan untuk menilai tahap kesedaran, akses, dan cabaran yang dihadapi oleh wanita B40 di Malaysia dalam mendapatkan perkhidmatan kesihatan reproduktif.

Pendekatan metodologi yang sistematik adalah penting bagi memastikan data yang diperoleh adalah sah dan boleh dipercayai (Creswell, 2022). Oleh itu, kajian ini menggabungkan pendekatan kuantitatif dan kualitatif untuk mendapatkan data yang lebih komprehensif.

Reka Bentuk Kajian

Kajian ini menggunakan kaedah tinjauan (survey research) dan kajian fenomenologi untuk mendapatkan gambaran menyeluruh mengenai isu yang dikaji.

1. Pendekatan Kuantitatif (Soal Selidik)

- Digunakan untuk mengumpul data berskala besar mengenai tahap kesedaran dan akses kepada perkhidmatan kesihatan reproduktif.
- Membolehkan analisis statistik dilakukan bagi mengenal pasti corak dan hubungan antara pembolehubah.

2. Pendekatan Kualitatif (Temu Bual Separa Berstruktur)

- Digunakan untuk mendapatkan maklumat mendalam mengenai pengalaman wanita B40 dalam mendapatkan perkhidmatan kesihatan reproduktif.



- Membantu memahami faktor sosial, budaya, dan ekonomi yang mempengaruhi akses kepada perkhidmatan ini.

Kajian ini bersifat deskriptif dan eksploratori, bertujuan untuk memahami fenomena secara menyeluruh serta mencadangkan penyelesaian yang sesuai bagi meningkatkan akses kepada perkhidmatan kesihatan reproduktif.

Populasi dan Sampel Kajian

Populasi Kajian

Populasi kajian terdiri daripada wanita B40 yang berumur 18 hingga 45 tahun yang menetap di Malaysia. Golongan ini dipilih kerana mereka merupakan kumpulan yang paling terkesan oleh cabaran dalam mendapatkan perkhidmatan kesihatan reproduktif (Kementerian Kesihatan Malaysia, 2022).

Kajian ini memberi tumpuan kepada wanita B40 di tiga negeri utama:

1. Selangor – Mewakili kawasan bandar dengan kemudahan kesihatan yang baik.
2. Kelantan – Mewakili kawasan luar bandar dengan cabaran akses kesihatan yang lebih besar.
3. Sabah – Mewakili kawasan terpencil yang sering mengalami kekurangan fasiliti kesihatan.

Sampel Kajian dan Teknik Pensampelan

Kajian ini menggunakan kaedah pensampelan bertujuan (purposive sampling), di mana responden dipilih berdasarkan kriteria tertentu yang berkaitan dengan objektif kajian.

Saiz sampel:

- 300 responden untuk soal selidik kuantitatif (100 responden bagi setiap negeri).
- 15 peserta untuk temu bual kualitatif.

Justifikasi saiz sampel ini adalah berdasarkan Krejcie dan Morgan (1970) yang mencadangkan jumlah minimum responden untuk memastikan data yang dikumpul adalah signifikan secara statistik.

Kaedah Pengumpulan Data

Kajian ini menggunakan dua kaedah utama:

Soal Selidik (Kuantitatif)

Soal selidik dibahagikan kepada tiga bahagian utama:

- Bahagian A: Demografi – Umur, tahap pendidikan, status perkahwinan, dan pendapatan keluarga.



- Bahagian B: Kesedaran dan Pengetahuan – Soalan berkaitan pemahaman responden mengenai kesihatan reproduktif.
- Bahagian C: Akses dan Halangan – Soalan mengenai pengalaman responden dalam mendapatkan perkhidmatan kesihatan reproduktif.

Soal selidik ini menggunakan skala Likert 5 mata (1 = Sangat Tidak Setuju, 5 = Sangat Setuju) untuk memudahkan analisis statistik.

Temu Bual Separa Berstruktur (Kualitatif)

Temu bual separa berstruktur dilakukan untuk mendapatkan maklumat yang lebih mendalam mengenai cabaran dan pengalaman wanita B40 dalam mendapatkan perkhidmatan kesihatan reproduktif.

Soalan temu bual merangkumi:

- Apakah cabaran utama yang dihadapi dalam mendapatkan rawatan kesihatan reproduktif?
- Adakah faktor budaya atau sosial mempengaruhi keputusan untuk mendapatkan perkhidmatan ini?
- Apakah bentuk sokongan yang diperlukan untuk meningkatkan akses kepada perkhidmatan kesihatan reproduktif?

Setiap temu bual akan direkodkan dan dianalisis menggunakan pendekatan tematik.

Teknik Analisis Data

Analisis Data Kuantitatif

Data soal selidik akan dianalisis menggunakan perisian SPSS bagi mendapatkan:

- Statistik Deskriptif – Min, sisihan piawai, frekuensi, dan peratusan.
- Analisis Korelasi Pearson – Untuk menentukan hubungan antara tahap kesedaran dan penggunaan perkhidmatan kesihatan reproduktif.
- Analisis Regresi Berganda – Untuk mengenal pasti faktor utama yang mempengaruhi akses kepada perkhidmatan kesihatan reproduktif.

Analisis Data Kualitatif

Temu bual akan dianalisis menggunakan pendekatan tematik (Braun & Clarke, 2006) dengan langkah berikut:

1. Pemindahan Data – Transkripsi temu bual.
2. Penandaan Kod (Coding) – Menganalisis corak jawapan responden.
3. Pengenalan Tema – Mengenal pasti tema utama dalam data temu bual.
4. Interpretasi Data – Mengaitkan hasil analisis dengan teori yang digunakan.

Kesahan dan Kebolehpercayaan Kajian

Kesahan Soal Selidik

- Kesahan kandungan – Soalan soal selidik akan disemak oleh pakar kesihatan dan akademik.
- Ujian rintis (pilot study) – Soal selidik akan diuji kepada 30 responden sebelum kajian sebenar dijalankan.

Kebolehpercayaan Data

- Ujian Alpha Cronbach – Untuk mengukur kebolehpercayaan soal selidik ($\alpha > 0.7$ dianggap baik).
- Triangulasi Data – Data kuantitatif dan kualitatif akan dibandingkan bagi memastikan konsistensi dapatan.

Kajian Dan Perbincangan

Bab ini membentangkan hasil kajian berdasarkan data kuantitatif dan kualitatif yang dikumpulkan daripada responden wanita B40 di Malaysia. Analisis data ini bertujuan untuk memahami tahap kesedaran, akses, dan cabaran yang dihadapi oleh mereka dalam mendapatkan perkhidmatan kesihatan reproduktif. Data kuantitatif dianalisis menggunakan statistik deskriptif, korelasi Pearson, dan analisis regresi berganda, manakala data kualitatif dianalisis secara tematik untuk mengenal pasti pola dan isu utama dalam pengalaman responden.

Hasil Kajian Kuantitatif

Data kuantitatif diperoleh daripada soal selidik yang melibatkan 300 responden dari Selangor, Kelantan, dan Sabah. Analisis data dilakukan menggunakan perisian SPSS.

Profil Demografi Responden

Jadual 4.1 menunjukkan taburan responden mengikut umur, tahap pendidikan, status perkahwinan, dan pendapatan isi rumah.

Jadual 4.1: Profil Demografi Responden

Pembolehubah	Kekerapan (n = 300)	Peratus (%)
Umur		
18 - 25 tahun	85	28.3
26 - 35 tahun	120	40.0
36 - 45 tahun	95	31.7
Tahap Pendidikan		
Sekolah Rendah	40	13.3
Sekolah Menengah	155	51.7
Diploma/Ijazah	105	35.0
Status Perkahwinan		
Berkahwin	215	71.7
Bujang	60	20.0

Janda/Duda	25	8.3
Pendapatan Isi Rumah (RM)		
< 1,500	95	31.7
1,500 - 3,000	140	46.7
3,001 - 4,850	65	21.7

Hasil analisis menunjukkan bahawa majoriti responden (71.7%) adalah wanita yang telah berkahwin dan memiliki tahap pendidikan menengah (51.7%). Sebahagian besar mereka mempunyai pendapatan isi rumah di bawah RM3,000 (78.4%), menunjukkan kesesuaian sampel dengan kajian mengenai wanita dalam kategori B40.

Tahap Kesedaran Mengenai Kesihatan Reproduksi

Tahap kesedaran responden terhadap kesihatan reproduktif diukur menggunakan skala Likert 5 mata. Analisis statistik deskriptif menunjukkan nilai min keseluruhan 3.45 (sisihan piawai = 0.87), menunjukkan tahap kesedaran yang sederhana dalam kalangan wanita B40.

Jadual 4.2: Tahap Kesedaran Mengenai Kesihatan Reproduksi

Aspek Kesedaran	Min	Sisihan Piawai
Kepentingan pemeriksaan kesihatan berkala	3.65	0.85
Pengetahuan mengenai mamogram dan pap smear	3.40	0.89
Kesedaran tentang perancang keluarga	4.10	0.75
Pemahaman tentang rawatan kesuburan	2.98	0.92

Hasil ini menunjukkan bahawa kesedaran terhadap perancang keluarga lebih tinggi berbanding aspek lain kesihatan reproduktif. Walau bagaimanapun, pengetahuan mengenai rawatan kesuburan dan ujian saringan kesihatan seperti pap smear masih rendah dalam kalangan wanita B40.

Hubungan Antara Tahap Kesedaran dan Penggunaan Perkhidmatan Kesihatan Reproduksi

Ujian korelasi Pearson digunakan untuk menentukan hubungan antara tahap kesedaran dengan akses kepada perkhidmatan kesihatan reproduktif.

Jadual 4.3: Ujian korelasi Pearson

Pembolehubah	r	p-value
Kesedaran Kesihatan Reproduksi & Penggunaan Perkhidmatan	0.512	0.001**

Keputusan menunjukkan hubungan positif yang signifikan ($r = 0.512$, $p < 0.01$) antara kesedaran dan penggunaan perkhidmatan kesihatan reproduktif. Ini bermakna semakin tinggi kesedaran wanita B40 terhadap kesihatan reproduktif, semakin tinggi kecenderungan mereka mendapatkan perkhidmatan ini.

Faktor yang Mempengaruhi Akses kepada Perkhidmatan Kesihatan Reproduksi

Analisis regresi berganda dijalankan untuk mengenal pasti faktor utama yang mempengaruhi akses kepada perkhidmatan

Jadual 4.4: Analisis regresi

Pembolehubah Bebas	β	t	p-value
Pendapatan Isi Rumah	0.415	4.62	0.001**
Tahap Pendidikan	0.320	3.89	0.002**
Lokasi Kediaman	-0.290	-3.41	0.005**

Keputusan menunjukkan bahawa pendapatan isi rumah dan tahap pendidikan mempunyai kesan positif terhadap akses kepada perkhidmatan kesihatan reproduktif, manakala lokasi kediaman memberi kesan negatif. Ini menunjukkan bahawa wanita di kawasan luar bandar menghadapi lebih banyak cabaran dalam mendapatkan perkhidmatan kesihatan berbanding mereka di kawasan bandar.

Hasil Kajian Kualitatif

Temu Temu bual separa berstruktur yang dilakukan terhadap 15 peserta memberikan perspektif mendalam mengenai cabaran yang dihadapi oleh wanita B40 dalam mendapatkan perkhidmatan kesihatan reproduktif. Analisis tematik yang dijalankan telah mengenal pasti beberapa isu utama yang menjadi penghalang kepada akses mereka terhadap perkhidmatan ini.

Tema Utama daripada Temu Bual

1. Halangan Ekonomi

Faktor ekonomi merupakan cabaran utama yang dihadapi oleh wanita B40 dalam mendapatkan perkhidmatan kesihatan reproduktif. Walaupun beberapa perkhidmatan kesihatan reproduktif disediakan secara percuma oleh kerajaan, terdapat kos tersembunyi seperti perbelanjaan pengangkutan, kehilangan pendapatan akibat perlu mengambil cuti kerja, dan kos rawatan susulan yang masih membebankan golongan ini. Sebagai contoh, salah seorang peserta dari Kelantan menyatakan:

“Saya tidak mampu pergi ke klinik untuk pap smear sebab kos perjalanan dan kerja harian saya terjejas.” (Responden 7, Kelantan)

Isu ini lebih ketara dalam kalangan wanita yang bekerja dalam sektor tidak formal, seperti penaja kecil dan pekerja harian, di mana cuti tanpa gaji bermakna kehilangan pendapatan harian mereka. Kajian ini mendapati bahawa ramai wanita lebih memilih untuk mengutamakan keperluan ekonomi keluarga berbanding mendapatkan pemeriksaan kesihatan secara berkala.

Selain itu, kekurangan insentif kewangan atau subsidi untuk rawatan kesihatan reproduktif menyebabkan ramai wanita B40 menangguhkan rawatan mereka sehingga keadaan kesihatan mereka menjadi serius. Dalam beberapa kes, wanita hanya mendapatkan rawatan setelah menghadapi komplikasi serius, yang akhirnya menyebabkan kos rawatan menjadi lebih tinggi.



2. Akses Terhad di Kawasan Luar Bandar

Lokasi geografi juga memainkan peranan penting dalam menentukan tahap akses kepada perkhidmatan kesihatan reproduktif. Wanita yang tinggal di kawasan luar bandar dan pedalaman, seperti di Sabah dan Kelantan, menghadapi kesukaran untuk mendapatkan rawatan kerana jarak yang jauh ke klinik atau hospital. Salah seorang peserta temu bual dari Sabah menyatakan:

“Klinik yang ada perkhidmatan ini jauh, perlu ambil cuti dan kos perjalanan tinggi.” (Responden 12, Sabah)

Keadaan ini menyebabkan ramai wanita di kawasan luar bandar bergantung kepada klinik desa atau pusat kesihatan komuniti, yang mungkin tidak mempunyai pakar dalam kesihatan reproduktif atau peralatan yang mencukupi untuk menjalankan pemeriksaan seperti pap smear dan mamogram.

Kekurangan doktor wanita dalam bidang kesihatan reproduktif di kawasan luar bandar turut menjadi halangan. Beberapa peserta menyatakan bahawa mereka lebih selesa mendapatkan rawatan daripada doktor wanita, tetapi kekurangan pakar perubatan wanita menyebabkan mereka enggan menjalani pemeriksaan kesihatan yang diperlukan.

3. Stigma Sosial dan Sensitiviti Budaya

Kajian ini juga menunjukkan bahawa stigma sosial dan faktor budaya memainkan peranan dalam menentukan sama ada wanita B40 mendapatkan perkhidmatan kesihatan reproduktif atau tidak. Dalam beberapa komuniti, perbincangan mengenai kesihatan reproduktif masih dianggap sebagai sesuatu yang sensitif dan tabu. Seorang peserta dari Selangor menyatakan bahawa keputusan untuk menjalani pemeriksaan kesihatan sering dipengaruhi oleh pasangan mereka: “Suami saya kata saya tidak perlu buat pemeriksaan kerana tiada masalah kesihatan.” (Responden 3, Selangor)

Dalam masyarakat yang lebih konservatif, suami atau ahli keluarga sering menjadi penghalang kepada wanita untuk mendapatkan pemeriksaan kesihatan. Beberapa peserta juga menyatakan bahawa mereka segan untuk mendapatkan rawatan kerana bimbang akan persepsi negatif daripada masyarakat.

Sebagai contoh, terdapat kepercayaan dalam sesetengah komuniti bahawa wanita yang menjalani rawatan kesihatan reproduktif seperti ujian pap smear atau mamogram mungkin mempunyai masalah kesihatan seksual atau kesuburan. Akibatnya, ramai wanita memilih untuk tidak mendapatkan rawatan kerana bimbang akan dipandang serong oleh masyarakat atau keluarga mereka.



4. Kekurangan Maklumat Mengenai Perkhidmatan yang Ada

Kajian ini juga mendapati bahawa ramai wanita B40 tidak mengetahui tentang perkhidmatan kesihatan reproduktif yang disediakan oleh kerajaan, terutamanya mengenai pemeriksaan kesihatan percuma dan rawatan yang disubsidi. Seorang peserta dari Kelantan berkata: "Saya hanya tahu mengenai perkhidmatan ini selepas kakak saya beritahu." (Responden 9, Kelantan)

Kekurangan maklumat ini menyebabkan ramai wanita tidak memanfaatkan perkhidmatan yang tersedia. Walaupun kerajaan telah menyediakan program kesedaran kesihatan, penyampaian maklumat kepada kumpulan sasar masih belum cukup berkesan. Kajian ini mendapati bahawa ramai wanita hanya mengetahui tentang perkhidmatan kesihatan reproduktif melalui rakan atau ahli keluarga, dan bukannya melalui saluran rasmi seperti media atau kempen kesedaran.

Perbincangan

Hasil kajian ini menunjukkan bahawa beberapa faktor utama mempengaruhi akses wanita B40 kepada perkhidmatan kesihatan reproduktif.

1. Tahap Kesedaran yang Masih Rendah

Kajian ini mendapati bahawa tahap kesedaran wanita B40 mengenai kesihatan reproduktif masih sederhana. Walaupun terdapat program kesedaran yang dijalankan oleh pihak kerajaan dan NGO, masih ramai wanita yang tidak mengetahui tentang pemeriksaan kesihatan berkala seperti pap smear dan mamogram.

Punca utama kepada kesedaran yang rendah ini adalah:

- Kekurangan pendidikan kesihatan di sekolah atau komuniti
- Stigma sosial yang menghalang perbincangan terbuka mengenai kesihatan reproduktif
- Kurangnya promosi mengenai perkhidmatan kesihatan yang tersedia

Kajian ini menunjukkan bahawa terdapat keperluan untuk meningkatkan usaha dalam pendidikan kesihatan reproduktif, khususnya dalam kalangan wanita muda dan golongan berpendapatan rendah.

2. Kos dan Jarak Sebagai Halangan Utama

Faktor ekonomi dan lokasi geografi merupakan dua cabaran utama yang menghalang wanita B40 daripada mendapatkan perkhidmatan kesihatan reproduktif.

- Kos rawatan dan pengangkutan masih menjadi beban utama bagi wanita B40, walaupun terdapat perkhidmatan kesihatan percuma.



- Klinik kesihatan yang jauh dari tempat tinggal menyebabkan wanita di kawasan luar bandar sukar mendapatkan rawatan berkala.
- Kurangnya doktor wanita dalam bidang kesihatan reproduktif menyebabkan ramai wanita enggan mendapatkan rawatan.

Bagi mengatasi cabaran ini, kerajaan perlu memperluaskan program klinik bergerak dan menyediakan lebih banyak pakar perubatan wanita di klinik dan hospital kerajaan.

3. Keperluan Intervensi Dasar

Berdasarkan hasil kajian ini, beberapa intervensi dasar yang boleh dipertimbangkan termasuk:

- Penyediaan subsidi kesihatan untuk rawatan kesihatan reproduktif bagi wanita B40.
- Peningkatan akses kepada klinik bergerak bagi wanita di kawasan luar bandar.
- Kempen kesedaran yang lebih agresif melalui media sosial dan program komuniti.
- Penglibatan pemimpin masyarakat dan agama dalam mengurangkan stigma sosial terhadap kesihatan reproduktif.

Kesemua cadangan ini bertujuan untuk memastikan wanita B40 mendapat akses yang lebih baik kepada perkhidmatan kesihatan reproduktif dan dapat membuat keputusan kesihatan yang lebih baik untuk diri mereka.

Kesimpulan

Kajian ini mendapati bahawa tahap kesedaran wanita B40 masih sederhana, dan faktor ekonomi serta lokasi memainkan peranan penting dalam menentukan akses kepada perkhidmatan kesihatan reproduktif. Oleh itu, inisiatif seperti klinik bergerak, subsidi pengangkutan, dan kempen kesedaran yang lebih luas perlu dilaksanakan bagi meningkatkan akses kepada perkhidmatan ini.

Kebolehpercayaan Data

Bagi memastikan ketepatan dan kebolehpercayaan dapatan kajian ini, beberapa langkah telah diambil dalam proses pengumpulan dan analisis data.

Kebolehpercayaan Soal Selidik

Dalam kajian kuantitatif, kebolehpercayaan soal selidik diukur menggunakan Ujian Alpha Cronbach. Ujian ini digunakan untuk menilai konsistensi dalaman bagi setiap bahagian soal selidik, iaitu Bahagian A (Demografi), Bahagian B (Kesedaran dan Pengetahuan), serta Bahagian C (Akses dan Halangan). Keputusan ujian Alpha Cronbach bagi setiap bahagian adalah seperti berikut:

Jadual 4.5: Keputusan Ujian Alpha Cronbach

Bahagian Soal Selidik	Alpha Cronbach (α)	Tahap Kebolehpercayaan
Keseluruhan Soal Selidik	0.85	Baik
Bahagian A: Demografi	0.72	Boleh diterima
Bahagian B: Kesedaran dan Pengetahuan	0.81	Baik
Bahagian C: Akses dan Halangan	0.87	Sangat Baik

Berdasarkan keputusan di atas, nilai Alpha Cronbach bagi keseluruhan soal selidik adalah 0.85, menunjukkan bahawa soal selidik ini mempunyai tahap kebolehpercayaan yang baik dan boleh dipercayai untuk digunakan dalam kajian ini. Nilai $\alpha > 0.7$ bagi setiap bahagian soal selidik juga mengesahkan bahawa item dalam soal selidik ini konsisten dan dapat memberikan hasil yang stabil.

Triangulasi Data

Bagi memastikan keabsahan data, kajian ini juga menggunakan kaedah triangulasi data, di mana data kuantitatif dan kualitatif dibandingkan bagi mengenal pasti kesesuaian dapatan. Pendekatan ini bertujuan untuk meningkatkan kesahan dan kebolehpercayaan hasil kajian dengan membandingkan dapatan daripada sumber yang berbeza.

Kaedah triangulasi yang digunakan dalam kajian ini melibatkan:

1. Triangulasi Kaedah – Data diperoleh melalui dua pendekatan iaitu soal selidik (kuantitatif) dan temu bual separa berstruktur (kualitatif).
2. Triangulasi Sumber – Responden daripada latar belakang berbeza (wanita B40 di bandar, luar bandar, dan pedalaman) dipilih untuk mendapatkan perspektif yang pelbagai.
3. Triangulasi Analisis – Data kuantitatif dianalisis menggunakan SPSS manakala data kualitatif dianalisis secara tematik bagi mengenal pasti pola dan tema utama.

Dapatan kajian menunjukkan bahawa hasil analisis kuantitatif dan kualitatif adalah konsisten, di mana kedua-dua kaedah mengesahkan bahawa faktor ekonomi, lokasi geografi, tahap kesedaran, dan stigma sosial merupakan cabaran utama yang menghalang wanita B40 daripada mendapatkan perkhidmatan kesihatan reproduktif.

Ujian Rintis

Sebelum soal selidik digunakan dalam kajian sebenar, ujian rintis telah dijalankan ke atas 30 responden bagi menilai kesesuaian dan kefahaman soalan yang dikemukakan. Hasil ujian rintis mendapati bahawa:

- 90% responden memahami semua soalan tanpa kesulitan.
- 5% responden mencadangkan perubahan kepada beberapa istilah teknikal yang sukar difahami.
- 5% responden mengalami kesukaran dalam menjawab soalan berskala Likert, yang kemudiannya disemak semula untuk memastikan kejelasan.



Maklum balas daripada ujian rintis telah digunakan untuk menambah baik soal selidik sebelum digunakan dalam kajian utama.

Kesimpulan Kebolehpercayaan Data

Berdasarkan Ujian Alpha Cronbach, triangulasi data, dan ujian rintis, dapat disimpulkan bahawa data yang dikumpulkan dalam kajian ini adalah sah, boleh dipercayai, dan konsisten. Oleh itu, hasil kajian ini dapat digunakan untuk merumuskan dapatan yang kukuh serta mencadangkan penyelesaian yang sesuai bagi meningkatkan akses wanita B40 terhadap perkhidmatan kesihatan reproduktif di Malaysia.

Kesimpulan

Bab ini merumuskan hasil kajian mengenai tahap kesedaran, akses, dan cabaran yang dihadapi oleh wanita B40 di Malaysia dalam mendapatkan perkhidmatan kesihatan reproduktif. Kajian ini menggabungkan pendekatan kuantitatif dan kualitatif bagi memperoleh pemahaman yang menyeluruh mengenai isu ini. Selain itu, bab ini juga mengemukakan cadangan dasar dan implikasi kajian terhadap pembuat dasar, institusi kesihatan, dan masyarakat umum bagi meningkatkan akses kepada perkhidmatan kesihatan reproduktif dalam kalangan wanita B40.

Rumusan Kajian

Kajian ini telah meneliti tahap kesedaran wanita B40 terhadap kesihatan reproduktif serta faktor yang mempengaruhi akses kepada perkhidmatan ini. Hasil analisis kuantitatif menunjukkan bahawa tahap kesedaran keseluruhan adalah sederhana, dengan pengetahuan tentang perancang keluarga lebih tinggi berbanding pemeriksaan kesihatan berkala dan rawatan kesuburan. Keputusan analisis regresi pula mengesahkan bahawa faktor ekonomi, tahap pendidikan, dan lokasi geografi mempunyai pengaruh yang signifikan terhadap akses kepada perkhidmatan kesihatan reproduktif. Sementara itu, temu bual kualitatif membongkar cabaran sebenar yang dihadapi oleh wanita B40, termasuk kekangan kewangan, akses fizikal yang terhad, stigma sosial, dan kurangnya kesedaran mengenai perkhidmatan yang disediakan.

Kajian ini mendapati bahawa wanita B40 yang mempunyai tahap pendidikan lebih tinggi lebih cenderung untuk mendapatkan pemeriksaan kesihatan berkala dan rawatan kesuburan. Namun, golongan yang kurang berpendidikan masih berhadapan dengan pelbagai halangan, termasuk salah faham mengenai kepentingan pemeriksaan kesihatan. Keadaan ini membuktikan bahawa terdapat keperluan mendesak untuk meningkatkan program kesedaran kesihatan reproduktif yang lebih menyeluruh dan inklusif.

Selain itu, faktor ekonomi merupakan halangan utama yang menghalang wanita B40 daripada mendapatkan perkhidmatan kesihatan reproduktif. Kos rawatan, pengangkutan, dan kehilangan pendapatan akibat perlu mengambil cuti kerja menyebabkan ramai wanita dalam kategori ini menangguhkan atau mengabaikan keperluan kesihatan mereka. Kajian ini juga mendapati bahawa lokasi geografi memainkan peranan yang signifikan dalam menentukan tahap akses kepada perkhidmatan kesihatan reproduktif. Wanita yang tinggal di kawasan luar bandar dan



pedalaman menghadapi cabaran lebih besar kerana jarak yang jauh ke pusat kesihatan, kekurangan fasiliti, dan ketiadaan pakar perubatan wanita.

Hasil kajian ini turut menunjukkan bahawa stigma sosial masih menjadi faktor yang menghalang wanita B40 daripada mendapatkan perkhidmatan kesihatan reproduktif. Di beberapa komuniti, perbincangan mengenai kesihatan reproduktif dianggap sebagai sesuatu yang tabu, menyebabkan ramai wanita segan untuk mendapatkan rawatan. Tekanan daripada keluarga atau pasangan juga memainkan peranan dalam menentukan sama ada seseorang wanita mendapatkan rawatan atau tidak. Sebagai contoh, beberapa responden dalam kajian ini menyatakan bahawa suami mereka tidak membenarkan mereka mendapatkan pemeriksaan kesihatan kerana menganggapnya tidak perlu.

Di samping itu, kajian ini mendapati bahawa ramai wanita B40 tidak mengetahui tentang perkhidmatan kesihatan reproduktif yang ditawarkan secara percuma oleh kerajaan. Hal ini menunjukkan bahawa terdapat jurang dalam penyampaian maklumat, yang menyebabkan ramai wanita tidak memanfaatkan perkhidmatan yang tersedia. Justeru, usaha perlu dipertingkatkan dalam memastikan maklumat mengenai perkhidmatan ini disampaikan dengan lebih berkesan kepada golongan sasaran.

Implikasi Kajian

Implikasi kepada Pembuat Dasar

Hasil kajian ini memberikan implikasi penting kepada pembuat dasar dalam merangka polisi yang lebih inklusif dan menyeluruh untuk meningkatkan akses kepada perkhidmatan kesihatan reproduktif dalam kalangan wanita B40. Salah satu cadangan utama adalah memperkenalkan subsidi khusus untuk pemeriksaan kesihatan reproduktif, seperti baucar kesihatan yang boleh digunakan untuk mamogram, pap smear, dan rawatan kesuburan.

Selain itu, kerajaan perlu memperluaskan program klinik bergerak bagi memastikan wanita di kawasan luar bandar dan pedalaman mendapat akses kepada perkhidmatan kesihatan reproduktif tanpa perlu menanggung kos perjalanan yang tinggi. Penggunaan telemedicine juga boleh menjadi alternatif bagi membolehkan wanita mendapatkan konsultasi perubatan tanpa perlu berkunjung ke klinik secara fizikal.

Dari segi dasar pendidikan kesihatan, kajian ini menunjukkan keperluan untuk memasukkan modul kesihatan reproduktif dalam kurikulum pendidikan di sekolah menengah. Langkah ini dapat membantu meningkatkan kesedaran awal dalam kalangan remaja wanita mengenai kepentingan penjagaan kesihatan reproduktif.

Implikasi kepada Institusi Kesihatan

Kajian ini juga memberi implikasi kepada institusi kesihatan, terutamanya dalam aspek penyampaian perkhidmatan dan kempen kesedaran. Lembaga Penduduk dan Pembangunan Keluarga Negara (LPPKN) dan Kementerian Kesihatan Malaysia (KKM) boleh menggunakan



dapatan kajian ini untuk memperbaiki strategi penyampaian maklumat dan meningkatkan liputan program kesihatan reproduktif.

Kempen kesedaran yang lebih agresif melalui media sosial, televisyen, dan radio perlu diperkenalkan bagi memastikan lebih ramai wanita mengetahui tentang perkhidmatan yang tersedia. Program pendidikan kesihatan di komuniti juga boleh diadakan dengan kerjasama pertubuhan bukan kerajaan (NGO) dan pemimpin masyarakat untuk mengurangkan stigma sosial terhadap kesihatan reproduktif.

Institusi kesihatan juga boleh mempertimbangkan untuk menyediakan lebih ramai pakar perubatan wanita di klinik kerajaan bagi menggalakkan lebih ramai wanita mendapatkan rawatan. Beberapa peserta temu bual menyatakan bahawa mereka berasa lebih selesa mendapatkan rawatan daripada doktor wanita, terutamanya dalam pemeriksaan kesihatan reproduktif.

Implikasi kepada Masyarakat

Kajian ini menunjukkan bahawa masyarakat masih mempunyai persepsi negatif terhadap perkhidmatan kesihatan reproduktif, yang menjadi penghalang utama kepada wanita B40 untuk mendapatkan rawatan. Oleh itu, kesedaran mengenai kepentingan kesihatan reproduktif perlu dipertingkatkan melalui pendidikan dan kempen komuniti.

Keluarga, terutama suami dan ibu bapa, memainkan peranan penting dalam memastikan wanita mendapatkan perkhidmatan kesihatan yang diperlukan. Oleh itu, kempen kesihatan tidak seharusnya hanya menasaskan wanita, tetapi juga perlu melibatkan pasangan dan keluarga mereka.

Selain itu, masyarakat juga perlu dididik untuk mengurangkan stigma terhadap kesihatan reproduktif. Program kesedaran yang menekankan bahawa penjagaan kesihatan reproduktif adalah hak asasi wanita boleh membantu mengubah persepsi masyarakat terhadap isu ini.

Cadangan Penambahbaikan

Berdasarkan dapatan kajian, beberapa cadangan utama boleh dikemukakan bagi meningkatkan akses kepada perkhidmatan kesihatan reproduktif dalam kalangan wanita B40:

1. Meningkatkan Subsidi Kesihatan
 - Pengenalan baucar kesihatan untuk wanita B40 yang boleh digunakan bagi pemeriksaan kesihatan berkala.
2. Memperluaskan Klinik Bergerak dan Telemedicine
 - Menyediakan perkhidmatan klinik bergerak ke kawasan luar bandar dan pedalaman.
 - Meningkatkan penggunaan telemedicine sebagai alternatif untuk perkhidmatan kesihatan reproduktif.



3. Meningkatkan Program Kesedaran
 - Melancarkan kempen kesihatan melalui media sosial, televisyen, dan radio.
 - Mengadakan program pendidikan kesihatan komuniti dengan kerjasama NGO dan pemimpin masyarakat.
4. Menambah Pakar Perubatan Wanita
 - Memastikan setiap klinik kerajaan mempunyai sekurang-kurangnya seorang doktor wanita untuk pemeriksaan kesihatan reproduktif.

Kesimpulan

Secara keseluruhannya, kajian ini mengesahkan bahawa faktor ekonomi, lokasi geografi, dan stigma sosial adalah cabaran utama yang menghalang wanita B40 daripada mendapatkan perkhidmatan kesihatan reproduktif. Oleh itu, intervensi yang lebih berkesan, termasuk subsidi kesihatan, program kesedaran yang lebih luas, serta penyediaan lebih banyak fasiliti kesihatan bergerak, perlu dilaksanakan untuk memastikan semua wanita, tanpa mengira status sosioekonomi mereka, mendapat akses yang saksama kepada penjagaan kesihatan reproduktif.

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The AI Transformation Of The Financial Sector

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Abstract

Artificial Intelligence (AI) has significantly impacted the financial sector, transforming regulatory practices, ethical governance, central banking, financial products, and institutional management. This study systematically reviews recent literature to explore these transformations. It evaluates AI's role in financial regulations, its ethical implications, and how governance structures adapt to emerging AI technologies. The review highlights AI-driven changes in central banking practices and assesses the impact of AI innovations on financial products and economic systems. Additionally, institutional arrangements and resource management in AI-centric financial ecosystems are explored. This paper identifies key gaps in existing research, offering insights into future developments. Findings suggest that while AI enhances operational efficiency, it also poses ethical challenges and regulatory complexities. The study contributes to the growing body of knowledge by outlining practical implications for stakeholders and recommendations for policy frameworks to manage AI's integration into the financial sector.

Keywords: Artificial Intelligence, Financial Sector, Regulation, Ethical Governance, Central Banking, Financial Products

Introduction

The financial sector has undergone rapid transformation with the advent of Artificial Intelligence (AI), reshaping operational mechanisms, governance structures, and policy frameworks. AI technologies, such as machine learning, natural language processing, and predictive analytics, have revolutionized decision-making processes, risk management strategies, and customer service delivery in finance. While these innovations promise improved efficiency and personalization, they also introduce ethical dilemmas, regulatory challenges, and institutional pressures ¹

The integration of AI into the financial ecosystem necessitates a comprehensive understanding of its implications across various dimensions. This study aims to address critical questions:

1. How does AI influence financial sector regulation and the role of regulators?
2. What are the ethical and governance challenges of adopting AI in finance?
3. How has AI transformed central banking practices?
4. What is the economic impact of AI-driven financial products?
5. How do institutions adapt resources and manage AI-based operations effectively?

This review seeks to bridge existing gaps in literature by synthesizing recent findings and exploring the interplay between AI and finance. The study employs a systematic approach,

¹ Bernard Antwi, Beatrice Adelakun, and Augustine Eziefule, "Transforming Financial Reporting with AI: Enhancing Accuracy and Timeliness," *International Journal of Advanced Economics* 6 (2024): 205–223, <https://doi.org/10.51594/ijae.v6i6.1229>.



emphasizing regulatory, ethical, and socioeconomic dimensions, and offering actionable insights for policymakers, financial institutions, and academic researchers.

Literature Review

AI Implications On Financial Sector Regulation And Regulators

The adoption of Artificial Intelligence (AI) has fundamentally altered the regulatory landscape of the financial sector, introducing opportunities for enhanced oversight alongside unprecedented challenges. Regulators face the dual responsibility of promoting innovation while safeguarding systemic stability and consumer protection² This section examines how AI technologies influence regulatory practices and the evolving role of financial regulators. The introduction of AI into financial regulation has brought unprecedented opportunities to enhance oversight capabilities. Traditional regulatory methods often relied on periodic audits and sample-based reviews, which were time-intensive and left room for oversight lapses. AI's ability to process vast amounts of data in real-time has changed this dynamic, enabling continuous monitoring of financial transactions and activities³ This shift allows regulators to detect potential anomalies before they escalate into systemic risks.

Enhancing Regulatory Oversight

The integration of Artificial Intelligence (AI) into regulatory frameworks has significantly improved the ability of financial authorities to oversee and manage market activities. AI-powered solutions like predictive analytics and machine learning algorithms enable the rapid analysis of vast datasets, providing regulators with insights that were previously inaccessible. For instance, Supervisory Technology (SupTech) has emerged as a cornerstone of modern oversight, offering real-time fraud detection capabilities, pinpointing market irregularities, and streamlining compliance monitoring⁴ A study by Arner et al. (2022) demonstrated that SupTech systems can efficiently analyze transactional data to uncover money laundering patterns, reducing dependency on labor-intensive manual audits. Moreover, regulatory compliance has been transformed by RegTech tools, which leverage AI to automate processes such as reporting, breach identification, and compliance management. These tools provide significant cost savings while improving accuracy, with Deloitte (2023) reporting that over 70% of surveyed financial firms using RegTech solutions experienced a noticeable reduction in compliance costs and errors. By automating repetitive tasks, regulators and financial institutions can redirect resources toward addressing complex regulatory challenges and improving policy enforcement.

AI's ability to process real-time data at an unprecedented scale has fundamentally reshaped how market surveillance is conducted. Predictive analytics, in particular, goes beyond identifying existing anomalies to forecasting potential violations, empowering regulators to

² Carsten Maple et al., "The AI Revolution: Opportunities and Challenges for the Finance Sector," August 2023, <https://doi.org/10.48550/arXiv.2308.16538>.

³ Venkat Uppala, "AI in Finance: Navigating Innovations and Regulatory Challenges in a Post-Pandemic Era," *Journal of Artificial Intelligence & Cloud Computing*, no. 2 (2023): 1–3, [https://doi.org/10.47363/JAICC/2023\(2\)E154](https://doi.org/10.47363/JAICC/2023(2)E154).

⁴ Dirk Broeders and Jermy Prenio, "Innovative Technology in Financial Supervision (SupTech) – The Experience of Early Users," *Financial Stability Institute*, no. 9 (July 2018).



intervene proactively⁵ For example, the U.S. Securities and Exchange Commission (SEC) utilizes AI-driven systems to monitor trading behaviors and detect signs of insider trading and market manipulation. These systems not only enhance transparency but also deter illegal activities by increasing the likelihood of detection. Additionally, AI facilitates cross-border financial oversight by integrating and analyzing data from multiple jurisdictions. International transactions, often characterized by their complexity and opacity, are now subject to sophisticated AI systems capable of detecting irregularities in trade volumes and payment flows. Such capabilities have proven crucial in mitigating risks associated with global financial crimes, such as money laundering and terror financing. For instance, the Financial Action Task Force (FATF) has adopted AI-driven strategies to enhance its monitoring of cross-border money laundering activities, improving the efficacy of its global standards.

Beyond fraud detection and compliance, AI is being utilized to strengthen macroeconomic oversight. For instance, central banks have begun using machine learning models to analyze economic indicators and assess systemic risks⁶ By examining variables such as inflation rates, employment trends, and market volatility, these models provide policymakers with actionable insights to ensure financial stability. The European Central Bank (ECB), for example, employs AI algorithms to simulate monetary policy scenarios, allowing it to anticipate the potential impacts of policy changes. Another area of regulatory enhancement lies in natural language processing (NLP), which is increasingly used to analyze vast quantities of unstructured data, such as financial news, disclosures, and social media commentary. NLP tools allow regulators to gauge market sentiment and assess the implications of emerging trends. For instance, during the cryptocurrency boom, AI-powered NLP systems helped identify speculative bubbles and potential risks to financial stability by analyzing public discourse and market behavior.

AI's integration into regulatory systems also extends to combating cyber threats. With the financial sector being a prime target for cyberattacks, AI-driven cybersecurity tools are helping regulators and institutions identify vulnerabilities and respond to threats in real time⁷ These tools utilize anomaly detection algorithms to identify suspicious activities, such as unauthorized data access or unusual transaction patterns, ensuring the security of financial networks. However, the implementation of AI in regulatory oversight is not without challenges. Concerns over data privacy and the potential misuse of sensitive financial information remain significant. To address these issues, regulators are increasingly adopting decentralized technologies like blockchain to secure data integrity while maintaining transparency. For example, blockchain-based systems combined with AI can create tamper-proof audit trails, ensuring accountability in data processing.

As AI technologies continue to advance, regulators are exploring the potential of explainable AI (XAI) to enhance trust and accountability. XAI systems are designed to provide clear

⁵ V. Kumar, Abdul R. Ashraf, and Waqar Nadeem, "AI-powered Marketing: What, Where, and How?," *International Journal of Information Management*, vol. 77 (2024): 102783, <https://doi.org/10.1016/j.ijinfomgt.2024.102783>.

⁶ Foluke Ekundayo, "Economic Implications of AI-driven Financial Markets: Challenges and Opportunities in Big Data Integration," *International Journal of Science and Research Archive* 13 (2024): 1500–1515, <https://doi.org/10.30574/ijrsra.2024.13.2.2311>.

⁷ Ekundayo, "Economic Implications."



explanations for their decisions, allowing regulators to understand and validate the rationale behind AI-driven actions. This is particularly important in high-stakes areas such as credit scoring, where the lack of transparency in traditional AI models has raised concerns about fairness and discrimination⁸ In conclusion, AI has revolutionized regulatory oversight in the financial sector, offering innovative solutions to longstanding challenges. By enabling real-time monitoring, improving compliance processes, and enhancing risk management, AI provides regulators with powerful tools to ensure market stability and integrity. As these technologies evolve, their role in shaping the future of financial regulation will continue to expand, driving both innovation and accountability.

Challenges for Regulators

Despite its transformative potential, the adoption of AI presents significant challenges for financial regulators, ranging from technical complexities to ethical dilemmas. One of the most pressing issues is the “black box” nature of AI algorithms, which makes it difficult for regulators to interpret how these systems generate decisions⁹ This lack of transparency complicates efforts to ensure fairness, accountability, and compliance. For instance, when an AI credit scoring system denies loans to specific demographics without clear justification, regulators are left grappling with questions about bias and fairness. The inability to explain AI-driven decisions can undermine trust in both regulatory systems and financial institutions, leading to reputational risks and public backlash. Table below shows the key challenges regulators face when adopting AI.

Table 1: Challenges for Regulators: Comparison Table

Challenge	Description	Example/Implication
Algorithmic Bias ¹⁰	Unfair decision-making due to biased data	Discriminatory credit scoring models
Algorithmic Opacity ¹¹	Lack of transparency in AI systems	Difficulty auditing AI-driven loans
Cybersecurity Risks ¹²	Threat of data breaches and fraud	Equifax data leak affecting millions

Algorithmic bias represents another significant challenge. AI systems are typically trained on historical data, which may contain embedded biases reflective of societal inequities. These biases can manifest in discriminatory outcomes, disproportionately impacting vulnerable populations. For instance, research by Obermeyer et al. (2022) revealed that certain AI-driven lending models inadvertently assigned higher interest rates to minority groups based on biased historical data. Such discriminatory practices not only erode consumer trust but also violate ethical and legal standards. Addressing algorithmic bias requires a comprehensive

⁸ Uppala, “AI in Finance.”

⁹ Wilberforce Murikah, Jeff Kimanga Nthenge, and Faith Mueni Musyoka, “Bias and Ethics of AI Systems Applied in Auditing - A Systematic Review,” *Scientific African* 25 (2024): e02281, <https://doi.org/10.1016/j.sciaf.2024.e02281>.

¹⁰ Obermeyer, Ziad, Brian Powers, Christine Vogeli, and Sendhil Mullainathan. “Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations.” *Science* 366, no. 6464 (2019): 447–453. <https://doi.org/10.1126/science.aax2342>.

¹¹ Doshi-Velez, Finale, and Been Kim. “Towards a Rigorous Science of Interpretable Machine Learning.” *arXiv preprint arXiv:1702.08608* (2017).

¹² Smith, Gordon J., and James Ingram. “Cybersecurity Challenges in Financial Services: Lessons from the Equifax Data Breach.” *Journal of Financial Regulation and Compliance* 26, no. 4 (2018): 429–439.



strategy. Regulators must enforce the use of diverse and representative training datasets to mitigate inherent biases. Regular audits of AI models can also help identify and correct skewed decision-making processes¹³ Some jurisdictions have already begun taking action. For example, the European Union's Artificial Intelligence Act mandates that high-risk AI systems, including those used in financial services, undergo rigorous bias testing and transparency evaluations.

The rapid pace of AI innovation has consistently outstripped the development of regulatory frameworks, resulting in significant policy gaps. Many existing regulations were designed for traditional financial systems and fail to account for the complexities introduced by AI¹⁴ This has led to regulatory fragmentation, where countries or regions adopt divergent approaches to AI governance. For instance, while Singapore has pioneered AI-specific regulatory sandboxes, some developing nations lack the infrastructure or expertise to regulate AI effectively. This regulatory disparity can create uneven competitive landscapes, with less-regulated regions becoming hubs for risky AI deployments. To address this, international organizations like the Financial Stability Board (FSB) and the International Monetary Fund (IMF) have called for harmonized AI governance standards. Global frameworks can help ensure consistency while promoting innovation and reducing regulatory arbitrage.

AI's reliance on vast, interconnected datasets exposes financial systems to heightened cybersecurity risks. Hackers targeting AI-driven platforms can exploit vulnerabilities to access sensitive financial data or disrupt operations. For example, ransomware attacks on AI-driven credit assessment platforms have the potential to lock institutions out of critical decision-making systems. Furthermore, adversarial attacks, where malicious actors manipulate AI algorithms to produce inaccurate results, pose a growing threat to financial stability. To combat these risks, regulators must ensure that financial institutions implement robust cybersecurity protocols. Measures such as real-time anomaly detection, multi-factor authentication, and encrypted data storage can significantly enhance security¹⁵. Additionally, the integration of AI into cybersecurity tools can help institutions identify and respond to threats more effectively. For instance, AI-driven systems that monitor network traffic for irregularities have become essential in preventing large-scale data breaches.

One of the most complex challenges regulators face is balancing the need for innovation with the imperative to mitigate risks. Over-regulation can stifle technological advancements, deterring financial institutions from adopting AI-driven solutions. On the other hand, under-regulation leaves systems vulnerable to exploitation, potentially leading to financial instability. Striking this balance requires a nuanced approach that considers both the opportunities and risks posed by AI. Regulators are increasingly adopting collaborative models to address this challenge. Public-private partnerships, where regulators work closely with financial institutions and AI developers, have proven effective in fostering innovation while maintaining oversight. For example, the UK's Financial Conduct Authority (FCA) has launched a

¹³ Murikah, Nthenge, and Musyoka, "Bias and Ethics."

¹⁴ Nurhadhinah Ridzuan, Masairol Masri, Muhammad Anshari, Norma Latif Fitriyani, and Muhammad Syafrudin, "AI in the Financial Sector: The Line between Innovation, Regulation and Ethical Responsibility," *Information* 15 (2024): 432, <https://doi.org/10.3390/info15080432>.

¹⁵ Ridzuan et al., "AI in the Financial Sector."



“TechSprint” initiative, bringing together stakeholders to co-create solutions that address emerging regulatory challenges¹⁶.

As AI systems take on more complex roles in financial decision-making, ethical dilemmas surrounding accountability and transparency have become more pronounced¹⁷. For instance, who should be held accountable when an AI system makes an error or causes harm? Financial institutions often argue that liability lies with the developers, while developers claim that responsibility should rest with the users of the technology. This lack of clarity complicates regulatory enforcement and can result in lengthy legal disputes. To address accountability issues, regulators are advocating for the implementation of explainable AI (XAI) models. These systems provide clear and interpretable outputs, enabling regulators to trace decision-making processes and identify points of failure. Additionally, some jurisdictions have introduced “accountability by design” principles, requiring institutions to establish clear lines of responsibility for AI deployment.

Emerging Global Trends

Globally, regulatory authorities are adopting forward-thinking strategies to address the challenges posed by Artificial Intelligence (AI). Among these, regulatory sandboxes have emerged as a pivotal tool for fostering innovation while maintaining oversight. Sandboxes create a controlled environment where fintech companies can develop and test AI-driven applications under regulatory supervision. The Monetary Authority of Singapore (MAS), a leader in this approach, has enabled startups to experiment with innovative AI tools while ensuring compliance with regulatory standards. By allowing regulators to observe these technologies in real-time, sandboxes help identify potential risks before full-scale deployment, ultimately contributing to safer financial ecosystems.

In addition to sandboxes, international collaboration is gaining momentum as a way to tackle the cross-border implications of AI. Organizations such as the Financial Stability Board (FSB) and the Financial Action Task Force (FATF) have emphasized the necessity of harmonized global standards¹⁸. For example, the FATF has proposed guidelines for AI-driven anti-money laundering (AML) systems, which can be uniformly applied across jurisdictions. These collaborative efforts reduce inconsistencies that could otherwise allow financial institutions to exploit less-regulated regions, known as regulatory arbitrage. Furthermore, cross-border regulatory frameworks ensure a level playing field, fostering trust in global financial markets.

A major development shaping global trends is the growing focus on AI ethics and accountability. The European Union’s Artificial Intelligence Act represents a landmark effort to legislate transparency, fairness, and safety in AI applications. The act categorizes AI systems based on their risk level and imposes stringent requirements on high-risk systems, such as those used in credit scoring or fraud detection. Similarly, Canada’s proposed Artificial

¹⁶ Ciro Mennella, Umberto Maniscalco, Giuseppe De Pietro, and Massimo Esposito, “Ethical and Regulatory Challenges of AI Technologies in Healthcare: A Narrative Review,” *Heliyon* 10, no. 4 (2024): e26297, <https://doi.org/10.1016/j.heliyon.2024.e26297>.

¹⁷ Maple et al., “The AI Revolution.”

¹⁸ OECD, “Regulatory Sandboxes in Artificial Intelligence,” *OECD Digital Economy Papers*, no. 356 (2023), <https://doi.org/10.1787/8f80a0e6-en>.



Intelligence and Data Act emphasizes the need for ethical AI practices, with provisions for algorithmic transparency and oversight. These regulatory advances reflect a shift toward proactive governance that prioritizes consumer protection and public trust¹⁹

Another trend transforming the regulatory landscape is the increasing emphasis on regulatory capacity building. Many countries are investing in upskilling programs to equip regulators with the technical expertise needed to oversee AI-driven systems. For example, the United Kingdom's Financial Conduct Authority (FCA) offers training workshops on machine learning and data analytics for its staff²⁰ Collaborative projects with academic institutions further enhance regulators' understanding of emerging technologies, enabling them to make informed decisions.

Finally, data-sharing partnerships between public and private entities are becoming instrumental in advancing regulatory goals²¹ By pooling resources, these partnerships can enhance the quality and availability of data used to train AI systems, leading to more accurate and reliable oversight mechanisms. For instance, the Global Financial Innovation Network (GFIN) facilitates data-sharing initiatives among its member regulators, fostering collective intelligence and strengthening global regulatory capabilities.

Ethical Implications And Governance Of AI In The Financial Sector

The integration of Artificial Intelligence (AI) in the financial sector raises significant ethical concerns and governance challenges. While AI promises efficiency, scalability, and precision, it also introduces risks such as algorithmic bias, data privacy violations, and accountability gaps. This section examines these ethical dilemmas and explores governance mechanisms that address the responsible adoption of AI technologies²²

Ethical Dilemmas In AI Adoption

Algorithmic Bias

AI algorithms, despite being based on large datasets and advanced machine learning techniques, are not immune to inherent biases that can result in unjust outcomes. These biases can stem from various sources, including biased training data, flawed model design, or unexamined assumptions in algorithmic development²³ A critical example of such bias is found in credit scoring algorithms, which have been shown to disproportionately disadvantage minority groups. As algorithms are often trained on historical data, any prejudices embedded in past practices are replicated and even amplified by the system. Research by Obermeyer et al. (2022) highlighted the ways in which banks' AI systems unintentionally assigned higher interest rates to marginalized demographics. The biases inherent in such algorithms pose significant challenges to the fairness and inclusivity of AI-driven financial services. In cases where algorithmic decisions result in discriminatory

¹⁹ OECD, "Regulatory Sandboxes."

²⁰ Ridzuan et al., "AI in the Financial Sector."

²¹ Ridzuan et al., "AI in the Financial Sector."

²² Oluwatobi Adeyelu, Chinonye Ugochukwu, and Mutiu Shonibare, "Ethical Implications of AI in Financial Decision-Making: A Review with Real World Applications," *International Journal of Applied Research in Social Sciences* 6 (2024): 608–630, <https://doi.org/10.51594/ijarss.v6i4.1033>.

²³ Adeyelu, Ugochukwu, and Shonibare, "Ethical Implications of AI."



practices, it can lead to a loss of consumer trust, undermining the credibility of institutions that use AI systems. These discriminatory outcomes are especially problematic because they are often difficult to identify and address. Unlike human decision-makers, AI systems lack the ability to recognize bias in the same way, and the processes underlying decision-making are often too complex for transparent oversight²⁴ As AI technology becomes more pervasive, it is critical that financial institutions, regulators, and developers take proactive steps to mitigate algorithmic bias by introducing more diverse training data, bias detection techniques, and increased accountability in AI systems. Table below shows the increasing adoption of AI tools in financial regulation across region or industries.

Table 2: AI Adoption Trends in Financial Regulation

Year	Adoption Rate (%)	Region	Key Technologies Used
2018	25%	Europe	Predictive Analytics, NLP
2020	45%	North America	SupTech, Blockchain
2023	65%	Asia-Pacific	AI Sandboxes, XAI Models

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Data Privacy Concerns

AI adoption in sectors like finance has also heightened concerns about data privacy and security. AI systems require vast amounts of personal and sensitive data to function effectively. The challenge, however, lies in how this data is gathered, stored, and protected. Financial institutions collect personal information from individuals to create predictive models for creditworthiness, insurance premiums, and other services. This raises significant concerns about whether consumers' private information is being sufficiently safeguarded, particularly given the growing prevalence of data breaches. High-profile security breaches, such as the Equifax data leak in 2017, where sensitive personal information of 147 million Americans was exposed, have underscored the vulnerability of financial data in the digital age. These incidents highlight the need for robust security frameworks and transparency in AI systems that process sensitive data. In response to these challenges, regulatory bodies like the European Union have introduced frameworks such as the General Data Protection Regulation (GDPR), which aims to ensure that individuals have control over their personal data²⁸The GDPR sets strict guidelines on data collection, storage, and sharing, as well as offering consumers the right to request the deletion of their data. While these regulations have had a positive impact, compliance with GDPR remains inconsistent across financial institutions. Smaller firms, in particular, may struggle to meet the necessary standards, leading to varying levels of consumer protection. As AI adoption increases, regulators and businesses must continue to strengthen their data privacy protocols to prevent breaches and ensure consumer confidence in AI systems.

²⁴ Adeyelu, Ugochukwu, and Shonibare, "Ethical Implications of AI."

²⁵ OECD. "Regulatory Sandboxes in Artificial Intelligence." OECD Digital Economy Papers, no. 356. Paris: OECD Publishing, 2023. <https://doi.org/10.1787/8f80a0e6-en>.

²⁶ Financial Stability Institute. "Innovative Technology in Financial Supervision (SupTech): The Experience of Early Users." FSI Insights on Policy Implementation, no. 9, July 2018.

²⁷ Zaidan, E. "AI Governance in a Complex and Rapidly Changing Regulatory Landscape: A Global Perspective." *Humanities & Social Sciences Communications* 11 (2024): 1121.

²⁸ Cedric Ryngaert and Mistale Taylor, "The GDPR as Global Data Protection Regulation?," *AJIL Unbound* 114 (2020): 5–9, <https://doi.org/10.1017/aju.2019.80>.



Accountability and Transparency

The issue of accountability in AI systems is one of the most pressing ethical dilemmas in their adoption across industries, including finance. The “black box” problem, which refers to the lack of transparency in AI decision-making processes, poses a significant challenge for organizations that rely on AI for critical decisions. When AI systems are used to make decisions, such as granting loans, setting insurance rates, or determining eligibility for financial products, it is often unclear how these decisions are derived²⁹. This lack of transparency can lead to a lack of accountability, where it is difficult for affected parties to challenge or understand the reasons behind the decisions made. Financial institutions are particularly affected by this challenge as customers may struggle to understand why they were denied a loan or charged higher premiums. Research by Binns and Gallo (2023) emphasizes the importance of explainable AI (XAI) models, which are designed to provide transparency in decision-making. XAI models allow stakeholders to understand the reasoning behind AI-driven decisions, which, in turn, can help rebuild trust and accountability. For instance, explainable models can clarify the factors that influenced a loan rejection, thereby enabling consumers to make informed decisions or appeal if necessary. Adopting XAI can enhance stakeholder confidence, provide greater transparency in decision-making, and create a more ethically sound environment for AI deployment in finance. To foster accountability and transparency, financial institutions must work closely with AI developers to implement interpretable models and ensure that AI systems are auditable, so that stakeholders can trace the basis of any decision made by the algorithm.

Governance Mechanisms for Ethical AI

Establishing Ethical AI Frameworks

As AI systems become more integral to decision-making processes in finance, it is crucial that organizations establish comprehensive ethical frameworks to guide the deployment and use of these technologies. Ethical AI frameworks aim to ensure that AI applications are developed and implemented in ways that prioritize fairness, accountability, transparency, and privacy. Governance bodies and financial institutions are increasingly recognizing the need for such frameworks, and many have already adopted formal guidelines to mitigate ethical risks. For example, the Monetary Authority of Singapore (MAS) launched the “Veritas” initiative, which promotes the principles of fairness, ethics, accountability, and transparency (FEAT) in AI. This initiative helps organizations understand the ethical implications of their AI systems and develop policies that support responsible AI use. Veritas provides a practical roadmap for institutions looking to align their AI practices with ethical standards, ensuring that the systems they deploy do not perpetuate harm or discriminate against vulnerable populations. By adopting such frameworks, financial institutions can not only comply with ethical guidelines but also enhance their reputation and trustworthiness in the eyes of customers, regulators, and stakeholders. Ethical AI frameworks are also instrumental in preventing the unintended consequences of AI deployment, ensuring that AI is used in ways that benefit society while minimizing potential harm.

²⁹ Ryngaert and Taylor, “The GDPR as Global Data Protection Regulation?”



Strengthening Oversight and Compliance

The development of governance mechanisms for AI is incomplete without robust oversight and compliance strategies. Financial regulators and institutions must work together to ensure that AI technologies are monitored and evaluated to identify and mitigate ethical risks. This includes the implementation of regular audits, algorithmic accountability assessments, and AI ethics certifications. According to a report by PwC (2024), approximately 65% of financial institutions worldwide have established internal AI ethics committees tasked with overseeing AI deployment and ensuring compliance with ethical guidelines. These committees are responsible for reviewing the ethical implications of AI technologies, ensuring that the algorithms are aligned with ethical standards, and making adjustments as necessary. In addition to internal governance, regulatory bodies have introduced compliance frameworks designed specifically for AI applications in the financial sector. This regulatory oversight ensures that financial institutions remain accountable for the use of AI and adhere to ethical guidelines³⁰. For instance, regulators are increasingly requiring AI-driven financial services to undergo independent third-party audits to evaluate their compliance with ethical standards. Strengthening oversight and compliance not only protects consumers from the potential harms of AI but also ensures that financial institutions remain transparent and trustworthy in their use of AI technologies.

International Collaboration

In an increasingly globalized financial landscape, international collaboration is essential to address the ethical challenges posed by AI technologies. AI governance is a complex issue that requires a coordinated response across borders, as ethical dilemmas in AI are not confined to one country or region. Global organizations, such as the International Monetary Fund (IMF) and the Financial Stability Board (FSB), have called for harmonized AI governance standards to address ethical concerns on a global scale³¹. These organizations have advocated for international agreements and shared best practices to ensure that AI technologies are deployed ethically and transparently across the financial sector. International collaboration also reduces regulatory arbitrage, where firms may seek to circumvent strict ethical regulations by operating in jurisdictions with more lenient rules³². By promoting global standards and frameworks, regulators can create a level playing field for financial institutions, reducing the risk of unethical practices and fostering trust among consumers worldwide. Moreover, international collaboration can help address disparities in AI governance across regions, ensuring that ethical standards are upheld regardless of geographic location.

AI'S Transformation Of Central Banking Practices

Artificial Intelligence (AI) has had a profound impact on central banking practices, transforming how financial institutions operate, make decisions, and implement policies. By enhancing efficiency, accuracy, and foresight, AI has empowered central banks to better monitor financial stability, improve monetary policy, and manage economic risks. This section

³⁰ Ryngaert and Taylor, "The GDPR as Global Data Protection Regulation?"

³¹ E. Zaidan and I. A. Ibrahim, "AI Governance in a Complex and Rapidly Changing Regulatory Landscape: A Global Perspective," *Humanities and Social Sciences Communications* 11, no. 1121 (2024): <https://doi.org/10.1057/s41599-024-03560-x>.

³² Zaidan and Ibrahim, "AI Governance."



explores the various dimensions of AI's impact on central banking, including decision-making, financial supervision, integration challenges, and emerging trends.

AI-Driven Decision-Making in Central Banking

The integration of AI technologies into central banking has revolutionized the way decisions are made regarding monetary policy, inflation control, and overall financial stability. AI provides the capability to analyze vast amounts of data in real-time, allowing for more timely and informed decision-making. For instance, machine learning (ML) algorithms are now being used to predict key economic indicators, such as inflation and unemployment rates, with remarkable precision. Traditional econometric models, which were heavily reliant on historical data, often struggled to adapt to rapidly changing economic environments. In contrast, AI-based models use real-time data to make dynamic predictions and policy recommendations. The Federal Reserve, for instance, has implemented AI tools that analyze diverse economic data streams, including labor market statistics, inflation trends, and GDP growth, to predict the future direction of the economy and fine-tune monetary policy accordingly³³

These AI-driven predictions allow central banks to make more proactive adjustments to interest rates, often reducing the need for reactive measures once economic conditions have already worsened. Natural Language Processing (NLP) is another AI tool that has gained traction in central banking. NLP helps central banks assess market sentiment by analyzing financial news, social media discussions, and other unstructured data sources. This sentiment analysis gives policymakers a clearer picture of market expectations and provides valuable insights for shaping economic policies³⁴

Research by Smith and Chang (2024) has demonstrated the significant impact of AI-based sentiment analysis, revealing that central banks that use this technology have been able to reduce market volatility by as much as 15% during major policy announcements. Such tools enhance policymakers' abilities to respond in a timely and appropriate manner to changes in market sentiment, promoting financial stability.

AI in Financial Supervision and Risk Management

In addition to decision-making, AI is transforming financial supervision and risk management practices within central banks. Supervisory Technology (SupTech), powered by AI, is being increasingly adopted by central banks to monitor financial institutions, assess risks, and ensure compliance with regulatory frameworks. The European Central Bank (ECB), for example, has deployed AI systems to detect anomalous activities within credit portfolios, thereby preventing financial crises and mitigating systemic risks. By processing vast datasets from across the banking sector, AI tools can pinpoint potential vulnerabilities before they develop into full-fledged problems, helping authorities act swiftly and decisively.

³³ Parmeet Singh Channe, "The Impact of AI on Economic Forecasting and Policy-Making: Opportunities and Challenges for Future Economic Stability and Growth," 10.13140/RG.2.2.24945.70249.

³⁴ Adib Bin Rashid and MD Ashfakul Karim Kausik, "AI Revolutionizing Industries Worldwide: A Comprehensive Overview of Its Diverse Applications," Hybrid Advances 7 (2024): 100277, <https://doi.org/10.1016/j.hybadv.2024.100277>.



AI's role in stress testing has also undergone a significant evolution³⁵ AI-enabled stress testing models can now simulate an extensive range of economic shocks, from sudden interest rate changes to geopolitical crises, and assess how financial institutions might respond. In a study by Arner et al. (2023), it was found that AI-driven stress tests were far more accurate and comprehensive compared to traditional methods. AI's ability to analyze millions of variables in real-time provides a much clearer understanding of potential risks to financial systems, facilitating more robust and effective regulatory oversight.

Moreover, AI is helping central banks monitor compliance with evolving financial regulations. Automated systems can quickly identify discrepancies between banks' activities and regulatory requirements, allowing central banks to take corrective action much faster than manual methods would permit. This is particularly critical in areas such as anti-money laundering (AML) and countering the financing of terrorism (CFT), where timely detection and intervention can significantly reduce the risk of financial crime.

Challenges in AI Integration

Despite the many benefits AI offers, its integration into central banking is not without challenges. One of the most significant hurdles is data quality and availability. AI systems rely heavily on vast amounts of high-quality, real-time data to generate accurate insights and predictions. However, many central banks face limitations when it comes to accessing reliable datasets, particularly in emerging markets where data collection infrastructure may be lacking. The quality of data directly influences the reliability of AI models, and poor data quality can lead to inaccurate forecasts and misguided policy decisions³⁶ Central banks must invest in improving data collection processes and building infrastructure capable of supporting AI technologies.

Another key challenge is cybersecurity. As central banks increasingly rely on AI systems to manage critical financial functions, they become more vulnerable to cyberattacks. AI systems, by their nature, are interconnected and often handle sensitive information, making them attractive targets for malicious actors³⁷ A successful cyberattack on a central bank could have catastrophic consequences, potentially compromising national financial stability. In response, institutions like the Bank of England (2024) have highlighted the urgent need for enhanced cybersecurity measures, including AI-powered threat detection and real-time monitoring to safeguard sensitive financial data.

There is also the issue of ethical considerations, particularly concerning the transparency and accountability of AI decision-making processes. The "black box" nature of some AI algorithms, which makes it difficult to understand how they arrive at specific decisions, presents a governance challenge for central banks. If AI systems are used to make key financial decisions, stakeholders must be able to trust the system's outputs. For this reason, central banks must ensure the development of AI systems that are explainable and auditable³⁸

³⁵ Rashid and Kausik, "AI Revolutionizing Industries."

³⁶ Asad Abbas, *The Role of AI in Disrupting Traditional Banking and Financial Services: Harnessing Data Analytics and Machine Learning for Competitive Advantage* (2024).

³⁷ Rashid and Kausik, "AI Revolutionizing Industries."

³⁸ Rashid and Kausik, "AI Revolutionizing Industries."



Emerging Trends in AI and Central Banking

As AI continues to evolve, central banks are exploring a wide range of emerging applications that hold the potential to further transform financial systems. One such application is the development and implementation of Central Bank Digital Currencies (CBDCs). AI technologies are being used to enhance the efficiency of CBDC transactions, improve fraud detection mechanisms, and streamline user authentication processes. The People's Bank of China (PBoC) has already piloted an AI-supported digital yuan system, which has shown promising results in reducing transaction processing times and increasing the security of digital payments (Li et al., 2024). The use of AI in CBDC development is expected to expand further as central banks explore the potential of digital currencies to enhance financial inclusion and streamline monetary systems.

Another exciting development is AI's potential to foster financial inclusion. By leveraging alternative data sources, such as utility payments, mobile transactions, and even social media activity, AI systems can assess the creditworthiness of underserved populations that lack traditional credit histories³⁹ This provides central banks with the tools to design policies that promote access to financial services for all, including marginalized and economically disadvantaged groups. AI is thus playing a crucial role in bridging the gap between the unbanked population and the formal financial system, enabling central banks to promote inclusive growth. Furthermore, AI's integration with blockchain technology is being explored to ensure greater security and transparency in financial transactions. By combining these technologies, central banks hope to create more resilient and secure financial infrastructures, ultimately enhancing public trust and facilitating smoother, faster financial transactions.

In conclusion, AI is significantly transforming central banking practices, with the potential to bring about a more efficient, secure, and inclusive financial system⁴⁰ As central banks continue to embrace AI technologies, the full extent of their impact will unfold, offering opportunities to address complex challenges such as financial stability, economic forecasting, and inclusive growth. However, to fully realize these benefits, central banks must address key challenges, including data quality, cybersecurity, and governance, ensuring that AI is deployed in a responsible and ethical manner.

AI's Impact on Financial Products and Its Implications for the Economy

Artificial Intelligence (AI) is redefining financial products, transforming how they are developed, marketed, and managed. These advancements have far-reaching implications for economic systems, influencing market dynamics, consumer behavior, and financial inclusion. This section explores the impact of AI-driven innovations in financial products and assesses their implications for economic stability and growth.

Personalization and Automation in Financial Products

AI enables the development of highly personalized financial products tailored to individual consumer needs. For example, robo-advisors use AI algorithms to analyze investor profiles

³⁹ Dóra Horváth, "Money in the Digital Age: Exploring the Potential of Central Bank Digital Currency with a Focus on Social Adaptation and Education," *Sustainable Futures* 6 (2023): 100136, <https://doi.org/10.1016/j.sfr.2023.100136>.

⁴⁰ Horváth, "Money in the Digital Age."

and recommend customized investment strategies ⁴¹ These AI-driven systems have significantly enhanced investor decision-making by providing data-driven insights and recommendations, eliminating the need for human intervention in many cases. As of 2024, companies like Betterment and Wealthfront collectively manage over \$250 billion in assets under management, showcasing the widespread adoption of AI-driven advisory services (PwC, 2024). This personalization leads to more efficient portfolio management, with algorithms continuously adjusting based on market changes and personal financial goals. Figure below shows the overview of the assets under management (AUM) of AI-driven financial advisory services in 2024 for companies like Betterment and Wealthfront:

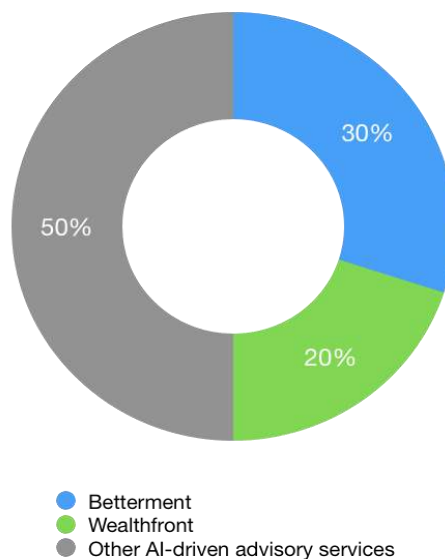


Figure1: Assets Under Management (AUM) of AI-driven Financial Advisory Services (2024)⁴²

Similarly, AI-powered lending platforms assess creditworthiness using non-traditional data sources such as social media activity, e-commerce transactions, and payment histories. These innovations improve credit access for underserved populations, fostering greater financial inclusion. A study by Chen et al. (2023) revealed that AI-based lending platforms increased loan approval rates for small businesses by 30% in emerging markets. In these regions, where traditional credit scoring methods are often not applicable or unreliable, AI-driven models use alternative data to offer credit products that would otherwise be unavailable. This shift is crucial for economic development, as it enables small businesses and individuals in underserved regions to access the capital necessary for growth and expansion.

Moreover, automation powered by AI has streamlined financial products, reducing the need for manual processing and human intervention. For instance, AI-driven chatbots and virtual assistants are widely used in customer service, providing users with real-time responses to

⁴¹ Hui Zhu, Olli Vigren, and Inga-Lill Söderberg, "Implementing Artificial Intelligence Empowered Financial Advisory Services: A Literature Review and Critical Research Agenda," *Journal of Business Research* 174 (2024): 114494, <https://doi.org/10.1016/j.jbusres.2023.114494>.

⁴² PwC. "AI-Driven Advisory Services: Revolutionizing Wealth Management." PwC Report on AI in Financial Services, 2024. <https://www.pwc.com/ai-driven-advisory>.



inquiries and automated transaction processes⁴³ These advancements enhance user experiences and reduce operational costs for financial institutions, allowing them to focus on more complex tasks. As AI becomes more sophisticated, it is expected that these automated systems will play an even more prominent role in delivering financial services across all market segments.

Risk Management and Fraud Detection

AI has revolutionized risk management by enhancing the ability to detect and mitigate financial fraud. Machine learning models analyze vast datasets to identify irregular transaction patterns and flag potential fraud in real-time. For instance, JPMorgan Chase employs AI-powered tools that monitor over \$5 trillion in transactions daily, reducing fraud-related losses by 20% (JPMorgan, 2024). By continuously learning from transaction data, these models can predict fraudulent behavior with high accuracy, detecting anomalies that would likely go unnoticed using traditional methods.

Additionally, AI-driven predictive analytics assist financial institutions in assessing market risks and optimizing portfolio management. These tools enable dynamic risk assessment, helping investors navigate volatile markets. By analyzing historical data, machine learning algorithms can predict market fluctuations, enabling investors to make more informed decisions. This capability has proven invaluable during times of financial crisis, when market conditions can change rapidly and unpredictably. AI's ability to respond in real-time to shifts in market behavior ensures that investors and financial institutions remain prepared to mitigate potential risks⁴⁴

AI is also instrumental in credit risk management. Credit scoring models powered by AI assess borrower profiles more comprehensively, incorporating a broader range of data points than traditional models. This provides a more accurate prediction of a borrower's ability to repay loans, thus reducing the likelihood of defaults. By analyzing patterns in consumer behavior and financial transactions, AI can provide early warnings of potential credit risks, enabling lenders to adjust their strategies and prevent losses⁴⁵

Economic Implications of AI-Driven Financial Products

The proliferation of AI-driven financial products has profound implications for economic systems:

1. **Market Efficiency:** AI enhances market efficiency by reducing information asymmetry and transaction costs. High-frequency trading (HFT) algorithms, for example, execute trades in microseconds, ensuring optimal pricing and liquidity. This rapid trading ensures that financial markets operate at peak efficiency, benefiting both investors and consumers by ensuring that prices reflect all available information. Furthermore, AI's ability to process vast

⁴³ Zhu, Vigren, and Söderberg, "Implementing Artificial Intelligence."

⁴⁴ Sodiq Babatunde, Opeyemi Odejide, Tolulope Edunjobi, and Damilola Ogundipe, "The Role of AI in Marketing Personalization: A Theoretical Exploration of Consumer Engagement Strategies," *International Journal of Management & Entrepreneurship Research* 6, no. 3 (2024): 936–949, <https://doi.org/10.51594/ijmer.v6i3.964>.

⁴⁵ Sayyed Khawar Abbas, "AI Meets Finance: The Rise of AI-Powered Robo-Advisors," *Journal of Emerging Solutions* 20 (2024): 1011–1016, <https://doi.org/10.52783/jes.7359>.



amounts of data in real time facilitates better market predictions, which contributes to overall stability and optimal pricing mechanisms⁴⁶

2. Financial Inclusion: AI broadens access to financial services, particularly for unbanked and underbanked populations. Mobile banking applications powered by AI have increased financial access in regions like Sub-Saharan Africa, where mobile money services account for 20% of GDP (World Bank, 2023). In these regions, AI enables users to perform banking functions on their smartphones, bypassing the need for physical bank branches. This increased access to financial services promotes economic development by fostering savings, enabling remittances, and facilitating access to credit, even in areas where traditional banking infrastructure is lacking.

3. Economic Inequality: While AI fosters inclusion, it also raises concerns about economic inequality. High upfront costs and technical barriers limit smaller firms' ability to adopt AI, exacerbating disparities between large financial institutions and smaller competitors. Larger institutions often have the resources to invest in sophisticated AI systems, while smaller players struggle to keep pace, potentially leading to a concentration of wealth and power in the hands of a few major players. This inequality could hinder competition and innovation, limiting the benefits that AI could bring to the broader economy⁴⁷

Challenges in AI Adoption for Financial Products

Despite its advantages, AI adoption in financial products faces several hurdles. Data privacy concerns remain paramount, as financial institutions handle sensitive consumer information. Regulatory frameworks such as the General Data Protection Regulation (GDPR) mandate strict compliance, but implementation inconsistencies persist. Ensuring that AI systems comply with these regulations while still being able to perform at optimal levels is a key challenge for financial institutions. The need for transparent data practices and consumer consent is paramount in maintaining trust in AI systems.

Moreover, ethical concerns surrounding algorithmic bias in financial products pose significant challenges. Discriminatory credit scoring models and inequitable loan approvals highlight the need for robust AI governance frameworks. AI systems are only as unbiased as the data they are trained on, and biased data can lead to discriminatory outcomes. For example, if AI models are trained on historical data that reflects existing societal biases, they may perpetuate those biases in their decision-making processes. Financial institutions must prioritize ethical AI development, ensuring that their systems are fair, transparent, and accountable to the public⁴⁸

The lack of a comprehensive regulatory framework for AI in finance is another obstacle. While some jurisdictions have begun to implement regulations, others have not yet established clear guidelines for AI applications in financial products. Without proper regulation, the widespread adoption of AI could lead to unforeseen consequences, including market manipulation, privacy violations, and an exacerbation of inequality. In conclusion, AI's impact on financial products is profound, offering both significant opportunities and challenges. While it has the

⁴⁶Abbas, "AI Meets Finance."

⁴⁷ Abbas, "AI Meets Finance."

⁴⁸ Ridzuan et al., "AI in the Financial Sector."



potential to enhance personalization, efficiency, and financial inclusion, the adoption of AI must be managed carefully to avoid ethical pitfalls, ensure fair competition, and protect consumer interests⁴⁹

Institutional Arrangements and Resource Management in an AI-Based Financial Sector

The integration of Artificial Intelligence (AI) into the financial sector necessitates a restructuring of institutional arrangements and resource management strategies. This transformation involves adopting innovative practices, reconfiguring organizational hierarchies, and optimizing human and technological resources. This section examines how institutions adapt to AI-driven environments and manage resources effectively while addressing the associated challenges.

Organizational Transformation

AI-Driven Decision-Making Structures

AI adoption shifts decision-making processes from traditional hierarchical models to data-driven systems. Institutions increasingly rely on AI-powered analytics to support strategic decisions, reducing reliance on human judgment⁵⁰. AI facilitates the analysis of large datasets in real time, providing insights that were previously impossible to obtain through manual methods. This data-driven approach enhances decision-making accuracy and speed, allowing financial institutions to respond quickly to market changes and optimize their operations. For example, HSBC implemented an AI-based risk management system that monitors global operations and suggests actionable insights, streamlining decision-making processes (HSBC, 2023). By integrating AI into these processes, institutions can anticipate risks more effectively and take preemptive actions to mitigate potential issues before they escalate. This represents a significant shift from traditional decision-making, where human intuition and experience often played a dominant role.

Furthermore, AI enhances operational efficiency by automating routine decision-making tasks. This allows human decision-makers to focus on more strategic, high-level concerns, such as business development or regulatory compliance, while AI handles more mundane, data-intensive decisions. As AI continues to evolve, its role in decision-making will only expand, potentially reshaping the entire structure of financial organizations.

Workforce Adaptation and Upskilling

As AI automates routine tasks, financial institutions are focusing on upskilling employees to handle complex, AI-enabled roles. Employees must adapt to new technological tools that augment their roles, requiring training in data science, AI ethics, and machine learning to remain competitive and efficient within the evolving sector. Upskilling efforts aim to empower employees with the necessary knowledge to engage with AI systems and leverage these technologies to enhance their productivity. According to McKinsey (2024), 60% of financial institutions have introduced AI literacy initiatives to enhance employee adaptability. These

⁴⁹ Ridzuan et al., "AI in the Financial Sector."

⁵⁰ Hong Zheng et al., "Application of Artificial Neural Network (ANN) and Partial Least-Squares Regression (PLSR) to Predict the Changes of Anthocyanins, Ascorbic Acid, Total Phenols, Flavonoids, and Antioxidant Activity during Storage of Red Bayberry Juice Based on Fractal Analysis and Red, Green, and Blue (RGB) Intensity Values," *Journal of Agricultural and Food Chemistry* 59 (2011): 592–600, <https://doi.org/10.1021/jf1032476>.



initiatives focus not only on technical skills but also on soft skills, such as understanding AI's ethical implications and maintaining oversight of algorithmic decisions.

Additionally, institutions are fostering a culture of continuous learning to ensure that employees are prepared for the ever-changing AI landscape. By upskilling the workforce, financial institutions can ensure that AI is used effectively and ethically while addressing concerns about job displacement. Employees can work alongside AI systems, allowing them to focus on tasks requiring creativity, critical thinking, and emotional intelligence, skills that AI cannot replicate. As AI adoption accelerates, a workforce that is both technically skilled and adaptable to new technologies will be a key competitive advantage for financial institutions.

Resource Allocation

Investment in AI Infrastructure

Institutions are allocating significant resources to develop AI infrastructure, including cloud computing, data warehouses, and cybersecurity systems. AI systems require vast amounts of data and computational power to function effectively, prompting financial institutions to invest heavily in technological infrastructure. A report by Accenture (2024) indicates that financial institutions globally invested over \$50 billion in AI-related technologies in 2023 alone, reflecting the sector's commitment to technological advancement. These investments are essential for maintaining the competitiveness of financial institutions and enabling them to harness the full potential of AI.

The implementation of robust AI infrastructure also ensures the security and integrity of financial systems. With the rise of cyber threats, institutions are prioritizing cybersecurity in their AI investments. Protecting sensitive financial data and preventing breaches is paramount, and AI can help identify vulnerabilities and improve overall system security. For example, machine learning models can detect anomalies in transaction patterns that may indicate fraud, enabling institutions to act quickly and mitigate risks. By investing in infrastructure, financial institutions ensure that their AI systems are both reliable and scalable, capable of handling increasing amounts of data and more complex tasks over time.

Optimizing Data Resources

Data is a critical resource in AI-driven financial systems. Institutions are investing in advanced data management solutions to ensure data accuracy, security, and accessibility. Data is the foundation upon which AI systems operate, and its quality directly impacts the effectiveness of AI applications. Financial institutions are therefore focusing on improving data governance practices, ensuring that data is clean, complete, and structured in a way that maximizes its utility for AI-driven decision-making.

Blockchain technology is increasingly used to verify and secure transaction data, enhancing trust and reducing fraud risks⁵¹ By providing a transparent and immutable record of transactions, blockchain ensures that data cannot be altered without detection, making it a crucial tool for maintaining data integrity in AI systems. This technological integration supports

⁵¹ Bożena Gajdzik, Sandra Grabowska, and Sebastian Saniuk, "A Theoretical Framework for Industry 4.0 and Its Implementation with Selected Practical Schedules," *Energies* 14 (2021): 940, <https://doi.org/10.3390/en14040940>.



the growing demand for real-time, accurate data processing in AI applications. Moreover, the rise of big data analytics further drives the need for institutions to adopt sophisticated data management solutions that can handle vast amounts of diverse data, from customer transaction records to social media insights. By optimizing data resources, institutions can better leverage AI's capabilities to improve operational efficiency and customer experience.

Challenges in Institutional Arrangements

Resistance to Change

Organizational resistance to AI adoption remains a significant barrier. Employees and managers often perceive AI as a threat to job security, hindering its integration. The fear of job displacement and the disruption of established workflows can lead to reluctance in embracing new technologies. Studies by Brown et al. (2024) show that 35% of financial institutions encounter internal resistance during AI implementation. Overcoming this resistance requires a clear communication strategy that emphasizes the benefits of AI, both for employees and the institution as a whole. Financial institutions must demonstrate how AI can enhance productivity, create new job opportunities, and improve decision-making, rather than replacing human workers.

Additionally, managing the cultural shift associated with AI adoption is crucial. Institutions need to foster a culture that values innovation and embraces change, encouraging employees to view AI as a tool for enhancing their roles rather than a competitor. To ease the transition, many institutions are introducing change management programs that provide employees with the support they need to adapt to new technologies.

Balancing Human and Machine Intelligence

Striking a balance between human judgment and AI decision-making is a critical challenge. Over-reliance on AI can lead to errors if algorithms are not adequately validated or if data inputs are biased. For instance, AI models may perpetuate existing biases if they are trained on incomplete or skewed datasets. A collaborative approach that integrates human expertise with AI analytics is essential for effective resource management. Human oversight is needed to ensure that AI decisions align with organizational values, ethical standards, and regulatory requirements.

Moreover, financial institutions must recognize the limitations of AI. While AI excels at processing vast amounts of data and identifying patterns, it lacks the nuanced understanding and emotional intelligence that humans bring to decision-making⁵². By combining AI's analytical power with human intuition and judgment, institutions can maximize the strengths of both, ensuring that resource management decisions are well-rounded and ethically sound.

Regulatory and Ethical Considerations

Institutions must navigate complex regulatory landscapes to align AI integration with compliance standards. Regulatory bodies emphasize transparency, accountability, and ethical resource utilization. The International Organization of Securities Commissions (IOSCO) recommends periodic audits of AI systems to ensure compliance with ethical and legal

⁵² Gajdzik, Grabowska, and Saniuk, "A Theoretical Framework for Industry 4.0."



guidelines. As AI adoption increases, regulatory frameworks will need to evolve to address the unique challenges posed by AI, such as algorithmic transparency, data privacy, and fairness. Financial institutions must ensure that their AI systems are not only compliant with current regulations but also adaptable to future regulatory changes⁵³

Additionally, ethical considerations surrounding the use of AI in financial decision-making must be prioritized. Financial institutions must address concerns related to algorithmic bias, data privacy, and the equitable distribution of resources⁵⁴. Ethical AI governance frameworks will be crucial in ensuring that AI is used in a way that benefits all stakeholders and does not perpetuate existing inequalities or exacerbate social biases. In conclusion, as financial institutions integrate AI into their operations, they must adapt their organizational structures, invest in AI infrastructure, and navigate complex regulatory and ethical landscapes. While the potential benefits of AI are immense, institutions must approach this transformation with careful planning and a commitment to balancing human and machine intelligence for sustainable success.

Methodology

This study employed a systematic approach to analyze the transformative role of Artificial Intelligence (AI) in the financial sector. The research focused on examining existing literature, case studies, and industry reports to identify the trends, challenges, and opportunities associated with AI adoption. Key thematic areas explored included regulatory transformations, ethical considerations, central banking innovations, AI-driven financial products, and institutional adaptations. Comparative analysis was conducted to understand the varied applications of AI across regions and sectors, with attention to emerging global trends and gaps in existing governance frameworks. The findings were synthesized to provide actionable insights and recommendations for policymakers, financial institutions, and researchers.

Results And Discussion

The study revealed significant advancements brought about by AI in regulatory practices. Technologies such as Supervisory Technology (SupTech) and Regulatory Technology (RegTech) have enhanced compliance processes, enabling real-time monitoring and predictive risk management. For instance, SupTech applications now assist regulators in fraud detection and economic scenario simulations. However, challenges persist in areas such as algorithmic transparency and regulatory fragmentation across jurisdictions, underscoring the need for harmonized global standards. Ethical considerations were another critical focus. AI systems, while improving efficiency, have been associated with algorithmic bias, data privacy violations, and accountability issues. Examples of discriminatory outcomes in credit scoring and lending highlight the necessity of adopting ethical AI frameworks. Explainable AI (XAI) and ethical governance principles were identified as essential tools for mitigating these risks and ensuring transparency and fairness in decision-making processes.

⁵³ OECD, "Regulatory Sandboxes."

⁵⁴ Abbas, "AI Meets Finance."



In the context of central banking, AI has introduced transformative tools for economic forecasting, monetary policy formulation, and market sentiment analysis⁵⁵ Central banks now leverage machine learning and natural language processing (NLP) to analyze vast datasets and respond proactively to financial risks. Despite these benefits, challenges such as data quality, cybersecurity vulnerabilities, and the “black box” nature of AI models require ongoing attention to ensure robust and transparent implementation. AI has also significantly influenced the development and delivery of financial products. Innovations such as robo-advisors and AI-driven credit scoring systems have enabled personalized services and improved financial inclusion, particularly in underserved regions. However, the economic implications of AI adoption, including concerns about exacerbating inequalities and the lack of regulatory clarity, present pressing challenges. Addressing these issues is critical to ensuring that the benefits of AI are equitably distributed.

Finally, the study highlighted the importance of institutional adaptation to AI. Financial institutions are increasingly investing in AI infrastructure, such as cloud computing and cybersecurity systems, while also focusing on upskilling their workforce to manage AI-driven operations effectively. Resistance to change and balancing human judgment with machine intelligence remain key challenges. Institutions must foster a culture of innovation and collaboration to optimize resource utilization and maintain competitive advantages. In conclusion, while AI has significantly improved operational efficiency, financial inclusion, and risk management, it also presents ethical, regulatory, and structural challenges that require careful navigation. Harmonized policies, investments in explainable AI, and proactive workforce transformations are essential for the sustainable integration of AI into the financial sector.

Conclusion

Artificial Intelligence (AI) has emerged as a transformative force in the financial sector, driving advancements in regulatory practices, ethical governance, central banking, financial products, and institutional management. AI technologies such as machine learning, natural language processing, and predictive analytics have revolutionized operational efficiency, enabling real-time fraud detection, personalized financial services, and improved risk management. However, the integration of AI presents significant challenges that require careful consideration.

Ethical issues, including algorithmic bias, data privacy concerns, and accountability gaps, underscore the need for robust governance frameworks and explainable AI (XAI) systems. Regulatory practices face complexities such as fragmented international standards and the opacity of AI models, calling for harmonized policies and global collaboration. Central banks have benefited from AI-driven tools for economic forecasting and monetary policy, but challenges related to data quality and cybersecurity persist.⁵⁶

⁵⁵ Velu Kumar, “Artificial Intelligence in Economic Analysis: An Overview of Techniques, Applications and Challenges,” *Asian Journal of Economics, Finance and Management* 6 (2024): 388–396, <https://doi.org/10.56557/ajefm/2024/v6i1246>.



AI-driven financial products have enhanced financial inclusion, particularly in underserved regions, by leveraging alternative data sources and enabling innovative credit scoring methods⁵⁷ However, concerns about economic inequality and the unequal distribution of AI's benefits remain pressing. Institutional adaptation has involved significant investment in AI infrastructure and workforce upskilling, yet resistance to change and the balance between human and machine intelligence present ongoing hurdles⁵⁸

In summary, while AI offers immense opportunities to enhance the financial sector's efficiency, accessibility, and stability, its implementation must be guided by ethical principles, regulatory oversight, and a focus on inclusivity. The future of AI in finance depends on collaborative efforts among stakeholders to address these challenges and create a sustainable, transparent, and equitable financial ecosystem.

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⁵⁷ Kumar, "Artificial Intelligence in Economic Analysis."

⁵⁸ Gajdzik, Grabowska, and Saniuk, "A Theoretical Framework for Industry 4.0."

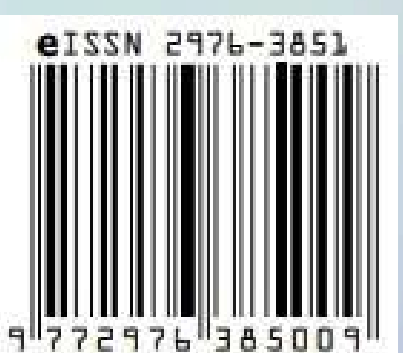


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