

FINANCING THE DEVELOPMENT OF ARTIFICIAL INTELLIGENCE MAID: AN ANALYSIS OF PERTINENT FIQHI ISSUES

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ABSTRACT

Artificial Intelligence (AI) is the latest machine technology that is replacing the effort of humans and is the fastest-growing sector across the globe. The underlying ethos of AI is to create a secure ecosystem for every human endeavour. Investors are claiming that the invention of an AI assistant such as a robot maid is the future reality. The AI robot is unstoppable and will obstruct how things are done at home. The development of AI and the demand for it indicates a future challenge to domestic activities. Since technology is replacing human efforts, scholars and researchers are concerned about the permissibility of Islamic banks to finance AI projects for the development of robot-maid. A robot maid is likely to exploit gender issues simply because consumers might prefer an AI maid that is male or female. Social violation in the use of AI maid will likely trigger further queries. This study uses the doctrinal approach of the qualitative method to explore Islamic thresholds and analyzes the juristic consideration for financing the development of AI for human development. The study explains the understanding of AI, its contributions to the world economy, and some pertinent issues and challenges. This study found that the growth of AI interventions in homes and care services is a reality, but financing AI maids requires adherence to Islamic requirements, including Shariah compliance and consideration of ethical, economic, security, and social concerns.

Keywords: Financing, artificial intelligence, Robot-maid, Shariah.

1. INTRODUCTION

Artificial intelligence has become the mainstay of modern socio-economic life. The government, corporations, and individuals are more concerned than ever about leveraging the use of AI in their various domains. The emergence of AI maids has generated hot debate among experts and religious scholars about exploring the possibility of robot maids with home services such as nannyng, babysitting, and house care (Fatahiyah Mahamood et al., 2023). A study has suggested that artificial intelligence machines will replace human effort in many domains of social activities. The modern robot has been designed to learn, reason, and be capable of self-correction (Tai, 2020). AI is the latest trend in the field of computer science. AI is disturbing the entire socio-economic and military sectors such as science, engineering, business, medicine & weather forecasting, and home care across the globe. AI products whether automation, machine learning, natural language processors, pattern recognition, or robots can be by different industries for digital image processing, big data analysis, speech recognition, medical diagnosis, statistical arbitrage, learning association, classification, and prediction. The recent demonstration of how AI robot features indicates that the production of housemaids from artificial tools is no longer a conjecture but rather a reality of the 21st century (Bajwa et al., 2021; Szczepański, n.d.).

Moreover, the Saudi Arabia authority has initiated a consideration to offer Sophia robot citizenship of Saudi Arabia. The implication is that the KSA law will be binding on Sophia's robot, she can sue and be sued in the law court (Ann Cao, 2017). Despite all these developmental issues surrounding the development of AI maids, the principal officers, experts, and Shariah scholars are concerned about the implication of accepting Sophia as having social status in the existing Islamic finance space (Sarea et al., 2021). If the Muslim authorities want it and the people also demand such services in their homes, will the Islamic financial institutions finance its production? However, there is a dire need to explicate the Islamic threshold based on fundamental Islamic principles, legal maxims, *Maqāṣid shariah*, and ethics on the compatibility of AI maid with the Shariah. The remaining parts of this study outline six sections. The first section reviewed facts of literature on past studies. The second section discussed the Concept, development, and scope of Artificial Intelligence. The third section explicates the justification for Artificial Intelligence maid. The fourth section explicates the need for AI robots and a few cases in reality. The fifth section highlights the roles of Islamic Financial Institutions in financing Artificial intelligence products. The sixth section explores a Juristic Conditioning (*Takyīf fiqhī*) for Financing A I Maid (*Insān Ālī*), while the last section presents the Conclusion.

2. THE CONCEPT, DEVELOPMENT, AND SCOPE OF ARTIFICIAL INTELLIGENCE

The concept of Artificial Intelligence is the use of a computerized machine to perform human tasks. Tools and equipment in the classical term help humans in getting things done. Human actions in the use of tools, instruments, and equipment are replaced with the use of AI. AI is now replacing human efforts such as visual perception, speech recognition, decision-making, and translation between languages. Examples of ordinary real-life AI are self-driving cars, Boston Dynamics, Navigation Systems, ASIMO, Chatbots, and Human vs. Computer Games. In recent times, an emerging application of AI such as robot maid, robot lawyer, and robot scholars has triggered the attention of experts and researchers(Xu et al., 2021).

Potential samples are Hollywood actors portrayed as robots, robot maids, and robot lawyers. It is important to note that artificial intelligence is the underlying factor in every possible robot. AI gives machines the ability to learn and improve their experiences to gain more knowledge without the aid of humans or programming. Alan Turing also developed a Turing test to determine the level of intelligence of a computer machine to perform an action and react to situations (Balwit et al., 2021; Chalmers et al., 2021). At present, scholars and scientists have contended that the Turing test which claims to measure the level of machine intelligence is inaccurate. The Future of artificial intelligence is real. Most potent countries in the world are now exploring the use of military synthetic intelligence drones and jet fighters. Modern society is exploring the application of robot lawyers, robot doctors, robot scholars, and maids. The AI machine has three key components. First; the stimulus agent is translated into an internal representation. Second; the internal image of the artificial intelligence is manipulated by cognitive procedures to create internal representations; finally; the internal representation is turned into action (Boucher, 2020; Hudson et al., 2023).

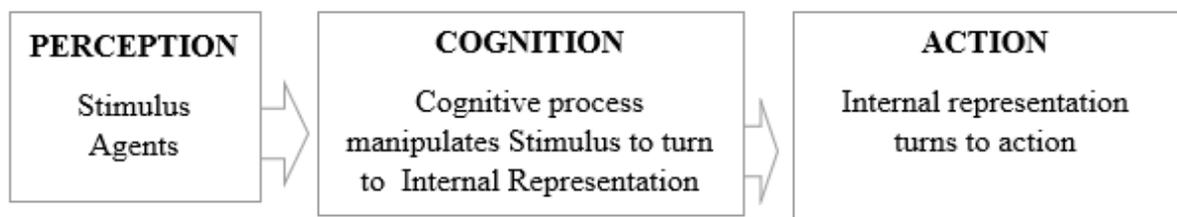


Figure 1. (Craik, 1943).

Artificial intelligence machines help to reduce bottlenecks and human casualties in the workplace. AI is useful for socio-economic activities like cleaning, shopping, and transportation (Abduljabbar et al., 2019; Ahmad et al., 2022).

The application of AI in-home services has gained higher market demands in recent times. Considering the scenario of an average person with a simple family, trying to get to work in the early morning, juggling emails, preparing kids and lunch, yet confronting the home disaster of floor dirt and toys scattered all around the place, Sometimes the household needs to take care of the home while expecting a visitor in the evening. The Aeolus Robot is a better replacement instead of hiring a pricey maid service to hand home services and entertain the guests (Toniolo-Barrios & Pitt, 2021). The Aeolus robot is a small child-size machine that performs domestic tasks like mopping, picking up things, arranging furniture, and retrieving drinks from the fridge without any social support.

Aeolus Robot is one of the latest multi-functional robots that functions like a human and is capable of doing stuff without the help of humans (Peter Holley, 2018). The Aeolus Robot can grow into an adult based on the number of people using it and over some time. Aeolus robot has intelligent artificial sensory that is connected to software that allows the machine to share information about thousands of objects and persons it had contact with. Aeolus improves and increases in knowledge and experience if it adapts to people and things in your home. The Aeolus robot obeys user instructions, implements memory, and has a self-understanding of what should be done at certain places and times in the house. The Aeolus robot can serve elderly users; it can take instructions such as, please can you get me a cup of milk from the fridge? Can you get me my glasses? The robot also has inbuilt intelligence to recognize posture and whether some have fallen and can also alert the emergency service (Suraya Akbarzad, 2018). In reality, the widespread use of these robots has been limited to a few wealthy countries. This is because poor Muslims, who live in extended families and cannot afford maids, do not need them. As a result, some scholars argue that the use of robots in this context is still considered a hypothetical issue (*fiqh iftirādī*), as it does not align with the actual resolution of the socio-economic challenges faced by the majority of Muslims worldwide.

3. LITERATURE REVIEW

Artificial intelligence is the fastest-growing sector in terms of penetration into the financial and economic markets of rich countries. Military power is also exploring the use of AI to attack and defend against the enemy without the help

of human soldiers. Mat Rahim et al., (2018) examines artificial intelligence and smart contract as the two-fundamental component of the Islamic financial industry. The authors argued that AI and SM are the surviving vital elements for the future of Islamic financial institutions. The research and market 2017 suggested that the AI market is expected to rise to \$16.06 billion by the year 2022. Consequently, the report recommended that Islamic financial institutions leverage AI and SM to benefit from these vast opportunities.

The growth of AI and smart contracts indicates the potential opportunities to replace the procedures of conventional banking. Islamic Fintech and Digital Banking a possible improvement in world financial transactions without jeopardizing the authenticity and credibility of the contractual terms; rather, it promotes them. The AI and SC enhance accuracy and minimize mistakes in the contractual document of financial transactions (Abbas & Hafeez, 2021).

The AI industry while revolutionizing the conventional financial sector, poses unprecedented challenges to the Islamic financial institutions. Artificial intelligence can promote business growth, innovation, and performance in the emerging world market. AI is creating hype and hope in the global financial market, particularly after the introduction of cryptocurrency. The disruption of AI in the financial market is real and is no longer an option but rather part of the present world financial transactions (Gazali et al., 2020). Customers need to change rapidly from traditional financial practices. AI is replacing the effort and intelligence of humans; thus, principal financial institutions are now exploring AI technology to avoid being left behind.

Gartner, an expert in artificial intelligence suggests that the customers of conventional and Islamic financial are becoming more informed and sophisticated. About 85% of customers will prefer to conduct their financial transactions without a human by the year 2020 (Javaid et al., 2022).

An artificial intelligence-based virtual financial advisor provides automated financial planning, generated by algorithm-driven software with very little or no human involvement. This technology is expected to render its financial services to broader audiences at a lower cost compared to traditional rational advice. At present, Wahed Invest is the leading Islamic investment company offering different kinds of Halal investment options. The company realized that Islamic financial institutions could not merely invest their funds in impermissible businesses. Thus, there is a need to explore the possible ways and avenues through which individual Islamic investors, corporations, and government bodies can have halal investment options in the entire artificial intelligence space (OECD, 2022).

Many Islamic financial institutions are going on fatwa shopping through the Smart Muftis from Google and other online fatwa platforms replacing the fundamental shariah role of the shariah advisory board. The emerging financial market indicates that financial institutions and fund managers are now using Robo Mentors to educate customers and create necessary awareness about their investment and wealth management (Hanani Mohd Safian Assoc et al., 2017). Benjamins & Ambassador, (2018) argued that there are six societal and ethical issues in the application of artificial intelligence robots and other AI products. Critics have suggested that AI applications as good as they promise will have some undesirable effects on humans and their activities. Secondly, AI is posing the challenge of liability questions to the entire IT industry as the cost of producing a single robot seems very high. Thirdly, the risk-risk are the potential challenges of AI product that is yet known to producers and users alike. Fourthly, the AI product might increase the concentration of power and select few in society. Fifthly, there is a potential problem of the human-robot relationship that has triggered a sociocultural and religious debate in recent times. Sixthly, the issue of intentionally wrong users might cause grievous harm to the user and other human beings (Dobbe et al., 2021; Tan, 2020).

The Artificial intelligence machine has posed the challenge of big data to the socio-economic world. Many AI companies gather information through social media and other platforms that can be used to manipulate human activities. The recent accusation against Mark Zuckerberg for using AI to gather big data to eventually manipulate the United States election is another important issue that regulatory institutions are considering regarding the application of AI. Leading institutions and governments are concerned about the need to come up with regulations and supervision for the production and use of AI products. There is a need to address the issue of the legal personality of AI robots since it is a potential replacement for human action activities. The Saudi Arabia authority is also considering the offering of citizenship and legal personality to the latest Sophia; an AI robot that acts like a human being. The issues remain, can she sue other persons and be also sued in the law court? Is the Sophia robot bound by Islamic law? Is there a need to develop a new rule for AI personalities in modern society? (Bird et al., 2020) .

4. THE NEED FOR ARTIFICIAL INTELLIGENCE MAID

The modern world and global village show that the socio-economic activities of the people depend more on tools, equipment, and machines to get things done. People need cars or buses to work, schools, and the market daily. People need to fix their homes and environment. Similarly, the act of division of labour among family members, co-workers, and business partners has

encouraged the acceptance of artificially intelligent machines to perform human tasks (Watabe et al., 2021). In a given series of activities, the manager can decide to replace a certain job with a machine to guarantee efficiency and transparency and save costs. An average wife mainly the career lady prefers tools that can help with the laundry, vacuuming the floor, washing the dishes, and clearing the garden. Home robots or robot maids invented by Electrolux in the 1990s can do these. The Electrolux home robot has three different kinds. First; the cleaning robot can vacuum the floor, do pool cleaning, and do window cleaning. Second; the entertainment robots that act as toys and hobbies for people, third; the domestic security and surveillance which identifies the vision and detect motions in its surroundings.

According to Forbes Technology Council 2019, the Artificial intelligence industries are planning a massive Artificial intelligence revolution in thirteen different sectors (Prassler & Kosuge, 2008). Cybersecurity, DevOps and cloud hosting, manufacturing, healthcare, construction, senior and home care, retail, business intelligence, city planning, mental health diagnosis and treatment, education, fashion, and supply chain management. A study shows that the increase in ageing people, divorced, widowers, and single citizens has triggered the rise in demand for artificially intelligent machines (Maung et al., 2022). AI maids can cater to the basic needs and services of people like senior citizens; making them feel comfortable and confident about living alone. This industry is producing AI maids or home care robots that will understand the culture and physical and emotional needs of the people. For instance, the 6th generation robot cleaner is getting a significant improvement after the iPad 6th generation products. Household industries have improved the production of vacuum robots for cleaning, and mowing chores. This improvement using AI facilities is meant to meet up with the 6th generation of products and services (Zhong et al., 2020).

The iRobot Roomba launched in 2002 has artificial intelligence capabilities that can identify the walls of the rooms, and with the sensory, which makes it avoid the stairs. Roomba robotic vacuum is capable of scanning the room size to identify and remember obstacles within the rooms (Maggie Astor, 2017). Similarly, the two Chinese companies; Alliance Capital and Lightning Capital spent about \$10 million in 2016 on the Emotech home care AI robot. The Emotech Olly robot performs house care and entertainment by keeping the company of senior people and single citizens. Emotech Olly can simulate human emotion to generate empathy. The Emotech can identify when a person is resting and putting his head on a couch. It can predict the type of music users can play based on sensory identification of the mood of the user (Haje Jan Kamps, 2017).

Home Security and Surveillance is another important future application of AI facilities. The Google Nest camera Buddy Guards are examples of Current Scenarios in the use of artificial intelligence for home security and surveillance. Buddy Guards is a Berlin-based startup that was funded via crowdfunding. Buddy Guard and Google Nest Cam have an artificially intelligent camera that makes the AI recognize faces and detect the suspicious sound of an intruder by giving an alert to the home users. Another advanced future AI security robot is Deep Sentinel. Sentinel is an American company that specializes in AI home solutions. In 2017, Sentinel raised finance of \$7.4 million to develop The Deep Sentinel. The Deep sentinel robot can predict and disrupt crimes and danger before they occur. The robot also has an inbuilt AI that uses a neural network that can identify potential crimes and risks inside and around the home and automatically trigger an alert before it occurs. The Company is trying to improve the scope of Deep Sentinel to provide security to the property instead of the home alone. For instance, a potential criminal can attack the Amazon delivery agent by the door or the front gate. The future Deep sentinel sensory behaviour will be improved to provide security and surveillance beyond the perimeter of the home(Cooney et al., 2023).

According to the study by Altman, Mulligan, & Shoham, (2016), the standard report of 2015 entitled "Artificial Intelligence and Life in 2030" suggests that the application of AI for speech recognition, natural language understanding, and image labelling is a potential boost for the possible domestic robot by 2030. The study claims that even though there are still challenges in creating mobility for home robots because the robot vacuum is restricted to the localized flat. There is ongoing research by massive hardware platforms that will enable maximum movement of home care robots within the home.

4.1 AI-Robot Case Study

The growth and acceptance of AI robot disruption in socio-economic activities became more apparent during the COVID-19 era and consequently during post-pandemic we have learned the lesson of the moving technological trend. Case (1): According to Kanika Saxena (2023), there is wide acceptance that this pandemic and post-endemic era belongs to AI robot and the reality have gotten to a situation where AI robot is about to defend speeding ticket cases in the US law court. Case (2): Peter Holley, (2018) also reported that a California motorcyclist has filed a lawsuit against General Motors, alleging that one of the company's self-driving cars, the Cruise AV, was operating negligently when it abruptly swerved into his lane, causing a collision that left him injured and unable to work. The incident occurred while the Cruise AV was in self-driving mode, with a backup driver present in the front seat. Despite

the lawsuit, a San Francisco Police Department report places blame on the motorcyclist for attempting to pass another vehicle unsafely. This case highlights the emerging legal and ethical complexities surrounding autonomous vehicles and their responsibility in accidents.

5. THE ROLE OF ISLAMIC FINANCIAL INSTITUTIONS IN FINANCING ARTIFICIAL INTELLIGENCE PRODUCTS

Companies and multinational agencies have begun to invest in artificial intelligence research development for home and service robots. In 2017, Dyson invested \$587 million in developing an R&D tech centre in Singapore that can produce AI robots for health care and home care services. The development and growing interest of financial industries in artificial intelligence R & D have attracted the attention of cleaning equipment in exploring collaboration with artificial intelligence technology providers. In 2018, San Diego startup Brain Corporation initiated a partnership with SoftBank Robotics Corp to provide AI products and services for the commercial cleaning business. The R&D investment plan of this collaboration has made the entertainment robot produce robot toys, and hobby robots rose to \$7.5 billion in 2017 (Dwivedi et al., 2022).

The United Arab Emirates (UAE) recently vowed to be a leading investor and user of AI, particularly among the Gulf Cooperation Council (GCC) countries. Although the extent of the UAE's participation in AI development and application is not categorically stated, the AI industry in the UAE is still at its nascent stage. Yet this decision is a giant stride and a trigger for other GCC countries and affluent Muslim countries. The financial and economic role of the UAE among Muslim nations remains significant. The UAE has a vital role in the development and investment volume of the Islamic capital market. The regulation and standard development institutions for Islamic finance industries such as IFSB rely much on the support and collaboration with UAE (Hussain et al., 2015).

It is interesting to note that people can now physically interact with Sophia's AI robot, but the challenge remains how many people can afford it and are willing to live with it? Similarly, Saudi Arabia is also considering giving the Sophia robot a legal personality within the kingdom. Considering all these developments among Muslims, the AI robot is not more hype but hope. However, the general Islamic financial industry needs to start talking about its general and specific role in the entire AI development and application.

6. JURISTIC ANALYSIS OF ARTIFICIAL INTELLIGENCE ROBOT (INSĀN ĀLĪ)

The growth of the AI market particularly among Muslim nations like Saudi Arabia, UAE, and Malaysia is an indication of the need to explain the juristic compatibility of Islamic banking participating in the finances of AI, especially the use of AI robot maids for home services and care. The AI robot maid is a potential help to the use of humans for house care, elderly care, home cleaning, security, and surveillance. The use of human house help has generated concern about human trafficking and child abuse in recent years. The introduction of AI robot maids is assumed to remedy the social menace caused as a result of employing house help. The robot maid can move around the bedroom and interact with elderly people and children who need their assistance.

However, critics have argued that the relationship between the robot maid and the users might trigger security challenges to human life. The robot care or maid might need to regularly collect, process, and recognize specific data about different individuals. Hence this information might, on the other hand, be dangerous to the personality and security of users such as older adults, children, and other home users. The robot maid functions effectively because it has an inbuilt sensor that collects data about the user. For instance, a robot maid might collect personal information about the user, which is likely accessible to third-party users such as marketers. Hence, there are also numerous juristic issues that this technology presents to the jurists, but for this study, we consider two among them.

First, Does the AI robot maid have a legal personality from a Shariah perspective? According to the ISRA compendium, the term "Personality" in Shariah refers to a real or legal entity that can take on liabilities, exercise rights, and accumulate assets. Personalities are categorized as either natural persons (individuals) or legal/artificial persons. Every individual is considered an independent personality from birth, while corporations gain legal personality upon incorporation (International Shariah Research Academy, 2010). The legal personality of an organization or company represents a collective of individuals and assets that have separate financial liabilities. Examples of entities with legal personality include companies, banks, associations, and endowments. Limited liability companies can have public or private institutions, state or public companies, and associations as legal personalities (Busari et al., 2019).

Scholars argue that for a person to have the legal capacity and claim rights, they must possess personality rights, including the right to sue and be sued, according to the concept of "*dhimmah*" in Shariah. This has led to opposing views among scholars regarding whether corporate entities can possess artificial personality rights and assume individual obligations (Rahman, 2012). Production and use of AI robots were prohibited by some scholars in general terms based on the evidence that prohibits photographs of living things (Imam Haramayn bin Yusuf Al-Juwayni, 2007; Muhammad Amin bin Muhammad Abidin, 1992). Among the evidence of this opinion is the hadith of the prophet (PBUH) that 'Abdullah bn Mas'ood (may Allah be pleased with him) reported that the Prophet (peace and blessings of Allah be upon him) said: "Those who will be most severely punished by Allah on the Day of Resurrection will be the image-makers." (Reported by al-Bukhari, see al-Fath, 10/382).

However, does an AI robot maid have a legal personality in Shariah? Recently, Dr. Magdi Ashur, the scientific advisor to the Grand Mufti of the Republic of Egypt, affirmed the permissibility of manufacturing robots (humanoids) and their use, provided that they serve a beneficial purpose and are not idolized, sanctified, or used for negative purposes (Ahmad Al-Buhayri, 2018). This opinion is evident that Allah prohibited statues that are created for worship besides Allah. According to Ahmad Al-Buhayri, (2018), statues like robots for socio-economic and intellectual benefits are permissible because the Quran mentions similar culture in the practice of the people of the prophet Dawud (ASW). "*They made for him what he willed: synagogues and statues, basins like wells and boilers built into the ground. Give thanks, O House of David! Few of My bondmen are thankful*" [Saba: 13].

Second, is it responsible for committing tort and liable to offence or mistakes against other people or who? The Islamic law of tort relies on the classical literature from the Islamic schools of law, particularly the Mālikiyyah, Ḥanafiyyah, Shafi'iyyah, and Ḥanābilah schools of law. The Islamic law of Tort (*Fiqh Jināyah*) encapsulates criminal cases such as *hudud* (mandated punishments), *Qīṣāṣ* (retaliations), *diyyah* (compensations) *siyāl* (assault), *ghasb* (usurpation), and *sulḥ* (reconciliation). The legality of AI robots seems interpolative to the law of tort on animals or machinery (Khan, n.d.). The law of tort usually brings to context the manufacturer or the user to be responsible for any offences against the object third party. The owner of the machine should be liable for any criminal charges against the machinery or the robot. Similarly, the owner should be responsible for suing the third party for any damage to the machinery or the robot. The evidence for this opinion is that artificial intelligence made our machine, and the owner or user is liable under the Islamic law of tort (Huberman, 2021)

On the other hand, there are still grey areas on the issue of AI robots either as maids or service givers. A robot is a machine that is intelligent and does not rely on human help. However, scholars are still concerned about awarding the AI robot juridical personality to sue and be sued in a law court. The evidence of this opinion is induced from some instances. First, the nature in which a potential AI robot works, and the development of its collective knowledge and its understanding of the task to be done is like the way human intellect develops.

Considering the position of Saudi Arabia in granting the potential AI robot maid, Sophia, a legal personality within their jurisdiction, there remain concerns surrounding the consequences of providing AI robots with legal personality persist among legal experts, as the AI robot maid may not meet the complete requirements of Aliyah (total juridical personality). Islamic law recognizes juridical personality for human beings, but certain individuals such as the insane, children, and mentally unstable persons are subject to partial or full interdiction (*Hajr*), as they lack complete juridical personality. The concept of *Hajr* (interdiction) refers to preventing or blocking certain individuals from certain actions or responsibilities (As-Salih & Sulaiman, 1401).

Under Islamic law, a court has the authority to impose *Al-Hajr* (interdiction) on an individual, restricting their ability to manage their property or wealth beyond necessities, including limitations on making donations or giving charity from their wealth. The Quran is evident that "And do not give the weak-minded your property" [Al-Nisāi: 5]. Allah also says: "And test the orphans [in their abilities] until they reach marriageable age. Then if you perceive in them sound judgment, release their property to them" [Al-Nisai:6]; these verses evident that interdiction is permissible on mentally retarded people and orphans to protect their property from liquidation. According to Al-Kasānī, (1986), the fundamental intent of the lawgiver (Maqāṣid Shariah) behind the concept of *Hajr* in Islam is not meant to violate human dignity, but rather as mercy, protection of general interest, and preservation of property rights of the individual and society. Therefore, in Islamic law, the responsibility and liability for torts committed by AI robots are still unclear, with classical literature and schools of law providing guidance. While concerns exist regarding granting AI robots juridical personality, the concept of interdiction (*Hajr*) in Islamic law allows for restrictions on an individual's property and wealth, aiming to protect their interests and property rights.

7. A JURISTIC CONDITIONING (TAKYĪF Fiqh) FOR FINANCING AI MAID (INSĀN ĀLĪ)

The growth and acceptance of AI interventions in homes and care services show that it is a reality. Instead, financing the development of AI maids requires juristic conditioning to meet basic Islamic requirements. Islamic financial industries willing to explore AI financing need to observe the Shariah compliance components based on Islamic principles, Islamic maxims, and the Maqasid Shariah requirement in financing business and innovation (Ibn Manzūr, 1414).

Firstly, the issue of economies of scale in the production of an AI maid. Islamic financial institutions should observe the principle of protection of funds (Ashur, 2013). The money in the treasure of Islamic financial institutions is funded from individual and corporate taxes and government savings; it is a trust on the part of the institution to protect the investment and returns of these funds. Where is the money spent and what returns does it bring? *Hifz al-mal* (protection of wealth) is one of the higher objectives of the lawgiver. The financial institutions should ascertain that the investment in AI maid has an economic scale (Lukonga, 2015). The Quran states: *“Do not entrust the incapable among your dependants with your wealth which Allah has made a means of support for you – but feed and clothe them from it, and speak to them kindly”* [An-Nisa: 5].

Secondly, the Artificial Intelligence maid is meant to house care and services. The nature and features of the AI maid should not trigger any conjugal violations. For instance, when an AI maid is produced specifically to look like a female maid, then it might trigger ethical concerns of sexual violation especially if it is purchased and used by a male and vice versa (Cheok et al., 2016; Döring & Poeschl, 2019). The Quran says: *“Do not go near adultery. It is truly a shameful deed and an evil way”* [Al-Isra: 32].

Thirdly, the issue of security risk in the development of AI maid. The personality of an Artificial Intelligence maid remains unknown in the legal space. Although an attempt has been made by Saudi Arabia to offer the Sophia robot a legal personality, the issues remain unclear. Legal experts are concerned about who should be responsible when the smart maid commits mistakes or causes danger to the users. Is it under the law or tort, who is responsible for its wrongs? the owner or the manufacturer? But if the AI maid is considered an alternative person, then there is a need for clarification of the status and legal personality of the AI maid (Atabekov & Yastrebov, 2018). When there is no evidence that a robot has a full legal capacity like a human, the owner should act as guidance on legal responsibilities and liabilities because the Quran says:

“...If the debtor is incompetent, weak, or unable to dictate, let their guardian dictate for them with justice....”[Al-Baqarah: 283].

Fourthly, there is a social relationship concern in the development and usage of the Artificial Intelligence maid. Considering the growth of the AI industry, an average AI maid is posing a social challenge of whether the AI robot can be an adopted child or engaged in a marriage relationship. Any marital relationship with the toy should be considered a violation of the social protection of the users. It is a fundamental requirement in Islamic law to protect the progeny. A potential AI user might violate the fundamental Islamic principle of safeguarding the progeny by getting married to an AI maid (Mohd Saifuddeen et al., 2013).

8. CONCLUSION

The stage of Artificial intelligence development by IT industries and the readiness of acceptance in the market indicates it's a reality of the century that the Islamic jurist cannot avoid. On the other hand, there are still issues relating to the production and usage of the AI maid. The social, economic, and legal issues discussed earlier in this study need the urgent attention of principal Islamic financial institutions like the Auditing and Accounting Organization of Islamic Financial Institutions (AAIOFI) and the Shariah Academy of Organization of Islamic Countries (OIC). There is a need to create a balance between the prospects and challenges of the AI maid. If there is a need for the Islamic financial institution to invest in the innovation and production of the AI maid, they should observe the necessary Islamic fundamentals and requirements. The investment in AI maids must not be a way of promoting social vices and violation of human progeny. The cost implication must be economic compared to the labour and services of a human being. Islamic financial institution that is considering a potential investment in AI robot must ensure the protection of the life and property of users. The application of AI maid should not cause damage or danger to the lives and property of the users.

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