

Examining the Financial Liabilities Arising from Self-Driving Car Accidents in Iranian and Islamic Law

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Abstract

With the rapid advancement of modern technologies and the emergence of self-driving cars, novel jurisprudential and legal challenges have arisen, particularly regarding liability in traffic accidents. Self-driving vehicles, which function autonomously through artificial intelligence (AI) systems, create complexities in determining responsibility when accidents or damages occur. This study explores the jurisprudential dimensions of liability stemming from incidents involving autonomous vehicles and seeks to address two fundamental questions. First, can liability arising from malfunctions or errors in automated systems be attributed to artificial intelligence itself or its designers, based on jurisprudential principles such as *al-tasbīb* (causation) and *al-ḍamān* (guarantee), or does the responsibility remain with human agents, including drivers? Second, when accidents occur at varying levels of automation, how should criminal and civil liabilities be apportioned among the driver, manufacturer, and software developers of the vehicle? The findings indicate that determining liability for self-driving car accidents in Islamic jurisprudence requires a precise interpretative approach that aligns with the principles and objectives of Sharia. Based on the principles of *al-tasbīb* and *al-ḍamān*, liability may be jointly attributed to AI system designers, technology manufacturers, and, under certain interpretations, the autonomous system itself. In particular, when technical errors or misjudgments occur during automated decision-making, the central jurisprudential question becomes whether accountability should rest with human actors or whether the autonomous systems—and by extension, their design and programming—should be recognized as the primary liable entities. At different levels of vehicle automation, both criminal and civil liabilities vary according to the extent of human versus system involvement. Therefore, the results of this research underscore the necessity of establishing a transparent and equitable framework for distributing responsibility among drivers, AI developers, and automobile manufacturers. Such an allocation of liability must be consistent with the *maqāṣid al-sharīʿa* (objectives of Islamic law) and uphold the protection of human life, property, and rights.

Keywords: self-driving cars, liability, *tasbīb*, *ḍamān*, artificial intelligence, criminal liability, civil liability

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1. Introduction

In the contemporary era, characterized by rapid technological progress and the emergence of artificial intelligence (AI), examining the jurisprudential and legal dimensions of smart systems has become a crucial topic of inquiry among Islamic jurists and legal scholars (Islami, 2024; Mohibbi, 2024). Given that legal systems continuously evolve alongside technological innovation, aligning these advancements with the principles of Islamic jurisprudence to formulate new rulings and address emerging societal needs has become increasingly vital (Abozaid, 2024).

Islamic jurists have traditionally endeavored to derive appropriate rulings through established jurisprudential methodologies when confronted with novel phenomena. The emergence of AI and its implications across diverse branches of Islamic law—including transactions, liability, destruction (*itlaf*), and even *diyāt* (blood money) and *qisās* (retribution)—has introduced significant challenges for Islamic legal interpretation (Fathi, 2023; Mousavi, 2023).

Among the most prominent technological innovations is artificial intelligence manifested through robotics, which, as human-made agents, can perform a range of actions independently. This progress has produced numerous applications, including in defense, healthcare, and, most notably, the transportation industry through self-driving vehicles (Abbaszadeh, 2022; Asran, 2023). Self-driving cars refer to vehicles capable of operating without direct human control, relying on sophisticated AI systems that process complex data to make navigation and safety decisions (Barzegar & Ilham, 2020).

However, the development of autonomous vehicles has raised fundamental issues concerning civil and criminal liability. One of the central jurisprudential challenges is determining legal responsibility in cases involving accidents or damages caused by such vehicles. According to the Islamic legal maxim *man lahu al-ghunm fa 'alayhi al-ghurm* (“he who benefits must also bear the liability”), any individual or entity that derives benefit from a vehicle’s use must also bear responsibility for compensating the harm it causes (Al-Sarakhsi, 2020). In the case of autonomous vehicles, which operate without human drivers, identifying the liable party requires a nuanced examination of Islamic legal doctrines such as *itlaf* (direct destruction), *tasbīb* (causation), and *damān al-‘aqd* (contractual liability) (Abozaid, 2024; Al-Kubaisi, 2024). A jurisprudential analysis of these doctrines facilitates the establishment of a legal framework consistent with Sharia principles to address contemporary technological realities.

Under international standards, self-driving vehicles are categorized into six levels of automation. At the initial three levels, the driver retains control while certain driving functions are automated. At higher levels, vehicles operate autonomously, and at level 5, complete automation eliminates the need for human intervention (Barzegar et al., 2021). These varying degrees of automation entail distinct legal and religious implications regarding liability.

For instance, when a driver supervising a level 2 or level 3 autonomous vehicle is involved in an accident, liability may be attributed to the driver under the principle of *al-tasbīb ka al-itlāf* (causation equates to direct destruction) (Ibn Zahra Halabi, 1988; Najafi, 1983). However, at levels 4 and 5—where human involvement is absent—determining responsibility becomes more complex. Should the manufacturer, software developers, or owner bear the liability for an accident? Addressing such questions necessitates rigorous jurisprudential evaluation (Abbaszadeh, 2022; Fathi, 2023). Accordingly, this study examines all six levels of automation comprehensively.

Several countries have enacted legislation to regulate these emerging challenges. For example, the U.S. state of Nevada became the first to legislate self-driving vehicles in 2011, and by 2020, forty U.S. states had authorized their operation. Similarly, in 2021, the United Kingdom allocated research funding to investigate the legal responsibilities associated with self-driving vehicle accidents (Abozaid, 2024; Al-Kubaisi, 2024). The relationship between automation levels and both civil and criminal liability in Islamic law thus constitutes a complex field of inquiry concerning “liability attribution.” Given that this issue lies at the intersection of advanced technology and jurisprudential tradition, it demands a detailed comparative analysis encompassing both civil and criminal dimensions (Fathi, 2023; Islami, 2024).

According to traditional Islamic jurisprudence, individuals and entities are accountable for actions directly attributable to them. However, when essential vehicle functions are governed by AI systems, fundamental questions arise: Can the driver still be held liable, or should liability shift to the manufacturer or software developer? Can an autonomous system be considered an independent causative agent and thus bear criminal responsibility? Or will jurisprudential interpretation continue to rely on the principle of human fault and direct causation (Asran, 2023; Ibn Taymiyyah, 1983)?

The core issue in this context centers on the jurisprudential debate between *tasbīb* (causation) and *mubāsharah* (direct action). The determination of whether responsibility can be assigned to machines and their creators across various automation levels—ranging from human-operated (level 0) to fully autonomous (level 5)—based on Islamic doctrines such as *al-tasbīb* (causation), *al-ḍamān* (liability), *al-yad* (custody), *al-ghurm bi al-ghunm* (liability accompanies gain), and *lā ḍarar* (no harm) requires comprehensive jurisprudential and legislative interpretation (Al-Hurr al-Amili, 1985; Al-Tusi, 1985; Al-Tusi, 1987). This necessitates considering diverse Islamic legal perspectives to address these new forms of liability both at the individual and institutional levels.

Among these perspectives, doctrines such as *ḍamān al-ṣāniʿ* (manufacturer liability)—which directly attributes responsibility to the producer for product defects—and *tasbīb*, where liability may transfer to a causative agent, must be critically analyzed and coherently interpreted (Ibn Qudamah, 1980; Najafi, 1983). These developments underscore the need for a fundamental reassessment of the interaction between Islamic law and technological innovation, presenting new challenges for Islamic judicial systems, particularly in assigning civil and criminal liability (Balhani & Ghilani, 2017; Tawahiya, 2017).

Given these jurisprudential complexities, this study seeks to address the following questions:

1. Can responsibility at different levels of vehicle automation be assigned to artificial intelligence systems and their designers based on Islamic legal principles such as *al-tasbīb* and *al-ḍamān*, or does responsibility remain with humans and drivers?
2. In the event of an accident at various levels of automation, how should criminal and civil liability be apportioned among the driver, manufacturer, and software developers?

2. Criminal Liability and Jurisprudential Challenges of Self-Driving Cars

From the standpoint of criminal law, attributing responsibility to an unconscious system that lacks awareness, volition, and intent is highly problematic. According to the Islamic legal maxim *lā jurm illā bil-qaṣd* (“there is no crime without intent”) and the general principle derived from Article 121 of the Islamic Penal Code, “No one bears criminal responsibility unless they have personally committed the offense,” criminal accountability fundamentally requires human intent and agency (Rezai et al., 2018). Therefore, self-driving vehicles, as non-sentient entities, cannot be deemed perpetrators of crimes. Even individuals involved in the design, production, or supervision of such vehicles may, in certain cases, be exempt from criminal responsibility due to the absence of *qaṣd al-jināyah* (criminal intent) (Abozaid, 2024; Islami, 2024).

3. Civil Liability and Compensation for Self-Driving Car Damages

In Islamic jurisprudence, the principles of *lā ḍarar* (no harm), *ḍamān bil-mubāsharah wa al-tasbīb* (liability by direct action and causation), and *itlāf* (destruction) serve as foundational doctrines in determining civil liability (Ibn Zahra Halabi, 1988; Najafi, 1983). Within the Iranian legal framework, civil liability extends beyond the individual’s own actions to include accountability for acts committed by others or by instruments under one’s control. Some Islamic jurists assert that if a person contributes to the design, programming, or operation of a device that causes harm, they may be held responsible based on the principle of *ḍamān* (liability) (Balhani & Ghilani, 2017; Tawahiya, 2017).

Accordingly, liability for damages resulting from self-driving cars may be analyzed through the jurisprudential theory of *ḍamān al-ṣāniʿ* (manufacturer liability), which attributes responsibility to manufacturers, programmers, and all parties involved in the system’s creation and operation (Abbaszadeh, 2022; Abozaid, 2024). This perspective is consistent with the principles of *al-ḍamān bil-ḍamān* (liability by guarantee) and *al-mutaqabbil lil-ḍamān* (guarantee through acceptance), emphasizing that those who profit from technological innovation must also bear the burden of risk (Al-Sarakhsi, 2020; Fathi, 2023).

4. The Necessity of Developing Jurisprudential Rules and Sharia Laws for Autonomous Vehicles

With the proliferation of advanced technologies and their integration into Islamic societies—including Iran—it has become essential to examine existing jurisprudential rulings and adapt them to contemporary technological realities. The central challenge lies in determining whether current jurisprudential rules suffice to address emerging issues, such as autonomous vehicles, or whether renewed *ijtihad* (independent reasoning) and reinterpretation of *fiqh* foundations are required (Al-Kubaisi, 2024; Mohibbi, 2024). Such adaptation ensures that Sharia remains responsive to evolving societal needs while maintaining its normative and ethical coherence.

5. Research Background

The rise of artificial intelligence and related technologies has profoundly influenced numerous aspects of human life, including transportation. Since the nineteenth century, and particularly in the twenty-first century, AI has been utilized to simulate human cognition, optimize decision-making, and enable autonomous functions such as self-driving vehicles (Fathi, 2023; Mousavi, 2023). These innovations have enhanced road safety and transformed social and urban infrastructures. It is predicted that such technologies will soon be widely adopted in developing nations as well (Abozaid, 2024).

Various domestic and international studies have examined the jurisprudential and legal responsibilities associated with autonomous vehicles. Domestic scholarship emphasizes the necessity of adapting insurance and liability frameworks to accommodate accidents involving autonomous systems (Barzegar et al., 2021). Other studies analyze criminal responsibility at different levels of automation, demonstrating that as autonomy increases, the user's responsibility decreases while accountability shifts toward manufacturers and programmers (Abbaszadeh, 2022; Barzegar & Ilham, 2020).

International research has also explored these issues. For instance, several contemporary works discuss the limitations of criminal liability within fully autonomous systems and argue that responsibility should extend to developers and technicians when technological failures cause harm (Asran, 2023; Islami, 2024). Ethical inquiries have likewise addressed the moral implications of AI decision-making and proposed governance mechanisms to regulate automated judgment processes (Abozaid, 2024; Al-Kubaisi, 2024).

Although the subject remains relatively novel in Iran, scholarly interest is increasing. Iranian theses and journal articles have begun examining topics such as criminal accountability in self-driving car accidents and the potential recognition of legal personhood for autonomous vehicles (Abbaszadeh, 2022). Other works propose mechanisms such as compensation funds and shared liability frameworks for damages caused by automated systems (Fathi, 2023). Collectively, these studies emphasize the need to reform and harmonize existing legal and jurisprudential frameworks with technological realities, ensuring that Islamic law remains capable of addressing emerging ethical and legal challenges (Balhani & Ghilani, 2017; Tawahiya, 2017).

Overall, both domestic and international research underscores that autonomous vehicle technology continues to face unresolved legal, ethical, and technical challenges. Proposals such as developing new laws, establishing compensation mechanisms, recognizing conditional legal personality for vehicles, and fostering collaboration between legislators and technologists are considered necessary to ensure the safe, just, and Sharia-compliant integration of autonomous vehicles into society (Islami, 2024; Mohibbi, 2024).

6. Research Methodology

This study employs a comprehensive descriptive-analytical methodology. It first delineates the foundational legal and jurisprudential principles governing bodily and financial damages arising from the use of autonomous vehicles. The conceptual framework is grounded in rational and systematic reasoning to analyze how modern technological developments intersect with established Islamic legal doctrines.

Data were collected primarily through library-based research methods, including the review of domestic and international scholarly books, academic articles, and credible online resources. These materials provide the basis for constructing coherent arguments and proposing jurisprudential solutions. The collected data are analyzed through the four traditional sources of Islamic reasoning—the Qur'an, Sunnah, consensus (*ijmā'*), and reason (*'aql*)—to ensure jurisprudential rigor.

The analysis relies on logical inference and analogical reasoning consistent with both Islamic and modern legal frameworks. The selected samples focus on legal and jurisprudential principles applicable to emerging technologies, with the purpose of addressing gaps in existing laws and formulating sustainable, Sharia-compatible solutions for regulating autonomous vehicles.

7. Theoretical Framework of the Article

7.1. Autonomous Vehicles

The term *autonomous vehicle* generally refers to a vehicle capable of motion and decision-making without the intervention of a human driver. Such autonomy is achieved through an integration of advanced sensors, algorithmic processing, and artificial intelligence (AI) technologies. Within Islamic jurisprudence (*fiqh*), this phenomenon is increasingly examined because of its profound implications for the principles of responsibility, fault, and safety (Islami, 2024; Jafari, 2023).

Autonomous vehicles employ AI-driven automation systems composed of complex algorithms and sensor arrays that collect and interpret environmental data to make operational decisions. Although similar systems are utilized across multiple industries, their application in transportation raises unique jurisprudential questions concerning human agency and accountability (Abbaszadeh, 2022; Mousavi, 2023). In Islamic law, the concepts of *fi'l al-insān* (human action) and *khaṭa'* (fault) acquire new complexity when actions are executed by autonomous systems. Although humans are responsible for the initial design and programming, the system's independent decision-making prompts debate over whether liability for accidents should rest with the designers and manufacturers or be attributed to the autonomous systems themselves (Fathi, 2023; Mohibbi, 2024).

A crucial jurisprudential issue in this context is that of *sabab* (cause) and *musabbib* (causer). In Islamic legal analysis, any harmful event requires the identification of the direct or indirect cause (*mubāshirah* or *tasbīb*). In autonomous vehicle incidents, determining causation becomes complex because decisions are produced through algorithmic reasoning rather than direct human action. Thus, it is necessary to assess whether responsibility lies with the human designer who created the decision-making system or with the autonomous system functioning independently (Mohibbi, 2024; Mousavi, 2023).

Consequently, Islamic jurisprudence must develop frameworks for determining liability in incidents involving autonomous vehicles. These frameworks should account for the autonomous decision-making processes and their correlation with the doctrines of fault (*taqsīr*) and causation (*tasbīb*). Because responsibility in Islamic law is determined by the existence of causation and fault, it is conceivable that, in some instances, liability toward victims may extend to designers and developers of the automation systems (Abbaszadeh, 2022; Fathi, 2023).

7.2. Exploring the Concept of Autonomous Vehicles and Types of Automation Systems

A rigorous analysis of the legal concept of autonomous vehicles and automation systems necessitates an in-depth understanding of the foundations of Islamic law. Within *fiqh*, responsibility (*mas'ūliyyah*) and legal obligation (*taḥlīf shar'ī*) occupy central importance. Because autonomous vehicles operate independently of human drivers, it is essential to determine which individual or entity bears responsibility for harm or damage resulting from their operation. Certain Islamic legal scholars maintain that if an autonomous vehicle causes injury or loss, liability should rest with the vehicle's owner or the producer of the automation system (Barzegar & Ilham, 2020; Najafi, 1983).

Accordingly, analyzing various automation levels and their interaction with human oversight is vital. Automation systems embedded in autonomous vehicles, governed by artificial intelligence, are designed to execute driving functions without direct human input. From an Islamic jurisprudential perspective, it must be examined whether such systems can themselves bear legal responsibility or be treated analogously to human agents. Some jurists argue that because these systems function through algorithms created by humans, ultimate responsibility must lie with their designers and developers (Abozaid, 2024; Al-Kubaisi, 2024).

Within this framework, ethical and legal concerns related to AI use in autonomous vehicles also arise. In Islamic ethics, decisions must align with the *maqāṣid al-sharī'a* (objectives of Sharia)—the preservation of life, property, intellect, lineage, and religion. Therefore, the design and deployment of such systems must adhere to these principles to prevent harm and ensure

justice, particularly in cases where technical malfunctions or decision-making errors occur (Abozaid, 2024; Al-Kubaisi, 2024).

Ultimately, Islamic jurisprudence requires a comprehensive and methodical approach to address the challenges posed by autonomous technologies. The analysis of these issues must involve reinterpretation of classical doctrines within modern contexts to ensure compliance with Sharia objectives. The adoption and operation of autonomous vehicles in Islamic societies should therefore be governed by clear jurisprudential principles that determine liability and responsibility in accordance with authoritative religious sources (Asran, 2023; Fathi, 2023).

7.3. Level 2 – Partial Automation

At Level 2 automation, the vehicle can simultaneously control several driving functions—such as steering and acceleration—while requiring the driver to remain alert and ready to intervene at any moment. This stage of automation raises substantial jurisprudential and legal challenges regarding *causation* (*tasbīb*), as determining whether the primary cause of an accident lies with the driver or the automated system demands thorough legal and factual investigation (Fathi, 2023; Mousavi, 2023). Within Islamic jurisprudence, responsibility may be jointly distributed between the driver, who maintains supervisory authority, and the manufacturer, whose system exercises operational control (Abbaszadeh, 2022; Barzegar et al., 2021).

In Islamic law, the principle *al-tasbīb yūjib al-ḍamān* (“indirect causation entails liability”) establishes that anyone who contributes causally to harm must provide compensation (Al-Tusi, 1987; Najafi, 1983). Accordingly, when the automated system is the immediate source of harm, jurisprudential analysis must determine whether the driver—who remains the owner and custodian under the rule *al-ḍamān ‘alā al-yad* (“liability lies upon the hand that possesses”)—bears residual responsibility for failing to supervise or override the system when necessary (Al-Hurr al-Amili, 1985; Ibn Qudamah, 1980). The driver’s omission or delayed reaction can therefore constitute actionable negligence if it results in damage or injury.

However, where a technical defect in the automated system directly causes the accident, liability may shift toward the vehicle manufacturer. According to the jurisprudential principle *al-‘aqd yūjib al-ḍamān* (“a contract entails liability”), the manufacturer assumes responsibility for defects arising from design or production errors (Abozaid, 2024; Al-Tusi, 1985). Thus, when programming or system design errors lead to an accident, the manufacturer’s contractual liability is established by default, as the defect originates within its domain of control.

Islamic jurisprudence also recognizes the doctrine of *mushtarak al-tasbīb* (shared causation), which holds that if two or more agents jointly contribute to a harmful outcome, liability is divided proportionally among them (Al-Tusi, 1987; Ibn Zahra Halabi, 1988). Consequently, when both the automated system and the driver’s negligence contribute to an accident, responsibility must be apportioned between the two. At the level of partial automation, since the driver retains a supervisory role, civil liability can be imposed for neglecting to monitor or intervene, while the manufacturer may simultaneously bear liability for technical failures.

In summary, civil liability at this stage of automation is governed by the combined application of the jurisprudential rules of causation and liability. When damage results from system malfunction, responsibility attaches to the manufacturer; when harm arises from the driver’s failure to act, liability rests with the driver. In cases involving both factors, shared liability applies, and unilateral blame assignment is inconsistent with Islamic legal reasoning (Al-Sarakhsi, 2020; Asran, 2023).

Criminal liability at this level presents additional complexities. Although the automated system performs certain driving functions, the driver is still expected to retain control and readiness to intervene. Under the principle *al-‘āqil rā‘in wa-mas’ūl ‘an ra‘iyyatihi* (“a rational agent is a guardian and accountable for what he oversees”), the person capable of decision and supervision remains responsible for their conduct (Al-Hurr al-Amili, 1985). Therefore, if the driver fails to act prudently or neglects to intervene when circumstances require, criminal responsibility may attach to the driver based on the maxim *man aznaba fa-‘alayhi al-‘iqāb* (“whoever commits a fault deserves punishment”) (Ibn Taymiyyah, 1983; Najafi, 1983).

Nevertheless, where the automated system’s malfunction is the direct cause of harm, the manufacturer may incur criminal liability in accordance with *al-‘aqd yūjib al-ḍamān* and related doctrines establishing responsibility for defective production

(Abozaid, 2024; Al-Tusi, 1985). In such circumstances, criminal culpability is derived from negligence in the design or failure to prevent foreseeable harm through adequate safety mechanisms.

In situations involving both driver negligence and systemic malfunction, Islamic legal reasoning supports the principle of distributed liability. Criminal responsibility may be attributed to the driver for neglecting their supervisory duties, while the manufacturer may be held liable for technical faults embedded within the automated system. The doctrines *al-ḍamān ‘alā al-yad* and *al-tasbīb yūjib al-ḍamān* thus jointly govern these complex cases, allowing proportional attribution of liability to both human and technological agents (Al-Tusi, 1987; Ibn Qudamah, 1980).

7.4. Level 5 – Full Automation

At Level 5 automation, the vehicle functions completely autonomously without any human intervention. All navigational and operational decisions are made by the artificial intelligence (AI) system. At this stage, the central jurisprudential challenge concerns criminal liability in the event of an accident: can the vehicle be considered an independent legal or moral agent, or does liability remain with the owner, manufacturer, or software designers? Within Islamic jurisprudence, fundamental rules such as *lā ḍarar* (“no harm”) and *tasbīb* (“causation”) are critical for resolving this issue (Fathi, 2023; Islami, 2024). Ultimately, most juristic analyses indicate that responsibility should rest with the manufacturing entities or regulatory bodies supervising the design and operation of these systems (Abozaid, 2024; Al-Kubaisi, 2024).

In fully automated systems, all decisions are generated through AI algorithms capable of perceiving the environment, analyzing data, and acting autonomously. Consequently, criminal and civil liability becomes increasingly complex. The key jurisprudential question is whether the vehicle itself can be regarded as an independent agent or whether liability must be attributed to human or institutional actors such as the producer, software developer, or supervising authority (Abbaszadeh, 2022; Mousavi, 2023).

The rule of *lā ḍarar*—a foundational principle cited in numerous classical jurisprudential sources—prohibits causing harm to others and mandates restitution when harm occurs (Al-Hurr al-Amili, 1985; Najafi, 1983). Applied to autonomous vehicles, this principle implies that if the AI system inflicts damage to persons or property, responsibility lies with the party whose action or omission enabled the harm. Hence, when an accident arises from a defect or error in the vehicle’s AI system, liability attaches to the manufacturer or software designer, who bears the obligation to ensure the product’s safety and reliability (Abozaid, 2024; Al-Sarakhsi, 2020).

Similarly, the rule of *tasbīb yūjib al-ḍamān* (“causation entails liability”) serves as a decisive criterion when multiple factors contribute to an accident. Under this rule, anyone who indirectly causes harm is responsible for compensation (Al-Tusi, 1985; Ibn Qudamah, 1980). Therefore, when an autonomous system’s defective algorithm or hardware failure indirectly results in damage, liability extends to the designers and manufacturers who created the causal chain leading to the incident. If supervisory institutions contribute through inadequate oversight, shared responsibility may apply according to the doctrine of *mushtarak al-tasbīb* (joint causation) (Al-Tusi, 1987; Fathi, 2023).

Given these jurisprudential principles, when autonomous vehicles operate entirely without driver or owner intervention, both civil and criminal liability in the event of harm primarily fall upon the system’s producers and designers. The doctrine of *ḍamān al-ṣāni‘* (manufacturer’s guarantee) imposes direct responsibility upon manufacturers for any defects in design or function that cause injury (Abbaszadeh, 2022; Al-Tusi, 1985). However, the core jurisprudential challenge lies in determining whether AI systems themselves can be recognized as independent juridical entities capable of bearing liability.

Most contemporary scholars reject the notion of AI systems as autonomous legal agents. They argue that because these systems are created, programmed, and controlled by humans, responsibility remains human-centered. This position aligns with the doctrine of *ḍamān al-ṣāni‘*, emphasizing that liability for defective design or malfunction rests on the human manufacturer or developer rather than the artificial entity (Al-Kubaisi, 2024; Ibn Zahra, 1988).

Furthermore, if no manufacturing or design defect is established and the harm results from external or unforeseeable causes, liability may be transferred to supervisory bodies or regulatory institutions overseeing autonomous transportation networks. According to *fiqhī* methodology, all causal factors must be analyzed comprehensively before final responsibility is assigned.

Through the combined application of the *tasbīb* and *lā ḍarar* rules, Islamic jurisprudence requires identifying every contributing element to determine proportional responsibility (Asran, 2023; Mohibbi, 2024).

At the stage of full automation, where vehicles act entirely without human participation, these jurisprudential complexities intensify. If the driver or owner exercises no control over the vehicle, the question of whether the system constitutes an “independent agent” becomes theoretically significant but legally untenable within Islamic law. Since AI lacks volition and intent (*qaṣd*), it cannot bear moral or criminal accountability. Therefore, responsibility remains with the human entities—manufacturers, developers, and regulators—whose actions or omissions contribute to the harm (Ibn Taymiyyah, 1983; Najafi, 1983).

Consequently, from an Islamic legal standpoint, criminal liability in cases involving fully autonomous vehicles should primarily rest with the producers, designers, and supervisory authorities. When an AI system’s flawed decision-making directly leads to an accident, liability for that flaw extends to those who designed and implemented the system. In sum, while automation eliminates the driver’s role, it does not eliminate human responsibility; rather, it reassigns accountability to those whose creative and managerial control governs the autonomous technology itself (Abozaid, 2024; Al-Tusi, 1985).

8. Conclusion

An analysis of the jurisprudential implications of different levels of automation—from level zero to level six—reveals that civil and criminal responsibility varies according to the degree of human intervention and control, as established by foundational principles of Islamic jurisprudence. In the initial stages, where human agency and direct control predominate, the rule of “guarantee of possession” and the driver’s personal accountability lead to attributing both civil and criminal liability to the driver, particularly when negligence, fault, or transgression can be proven.

As automation advances and human involvement in decision-making decreases, the jurisprudential focus of responsibility transitions from direct causation to indirect causation and, ultimately, to liability arising from manufacturing and production. In intermediate levels of automation, specifically levels two through four, the central point of debate in the jurisprudence of responsibility concerns the ability to establish elements of intent, error, or negligence in the act of driving. According to the principle that “whoever has control over something is responsible for what it destroys,” the driver may still bear liability; however, as the autonomous system assumes greater decision-making authority, responsibility increasingly shifts toward manufacturers, system designers, and regulatory institutions tasked with ensuring safety.

In this context, applying the rule that “causation may outweigh direct causation in the absence of intentionality” provides valuable interpretive guidance. This means that where a jurist determines that causation supersedes direct action in specific cases, the responsibility of the manufacturer may justifiably take precedence over that of the driver.

At the higher levels of automation—levels five and six—the attribution of liability to the driver or owner becomes increasingly limited. The principal burden of responsibility then rests upon producers, programmers, and supervisory authorities, consistent with jurisprudential doctrines such as “liability of the manufacturer,” “gain corresponds with loss,” and “no harm.” From a criminal law perspective, it is untenable to ascribe culpability to an entity devoid of intent or volition. Consequently, extending criminal responsibility to individuals uninvolved in the causal process of the incident would contradict established jurisprudential principles.

At this advanced stage, reflection upon doctrines such as “liability of the trusted” and “responsibility of rulers in management” becomes essential. Supervisory institutions overseeing the design, development, and regulation of autonomous technologies may themselves bear responsibility under the principle of causation if they act negligently or fail to adopt necessary precautionary measures.

Therefore, the jurisprudential evolution of liability within automation systems proceeds from individual and direct fault toward indirect, industrial, and ultimately institutional or governmental responsibility. This progression aligns with the inherent logic of Islamic legal principles, which consistently tie the degree of responsibility to the extent of control and authority exercised over the causative process. As a result, accountability within the autonomous vehicle framework gradually shifts from natural persons to legal entities and from personal liability for possession to liability for manufacture and regulatory oversight.

Ethical Considerations

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Conflict of Interest

The authors report no conflict of interest.

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