Moral Hazard Determinants Across Industries: Insights From Agency Theory and Relevance To the Halal Industry

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ABSTRACT

This review examines the determinants of moral hazard across different industries through the lens of Agency Theory and discusses their conceptual relevance to the halal industry. Drawing on Jensen and Meckling (1976) and subsequent studies, the review considers literature from finance, insurance, agriculture and business. Nine determinants are synthesized: information, incentives, monitoring, law enforcement, competition, risk, time horizon, culture and third-party participation. Across the literature discussed, information asymmetry and misaligned incentives emerge as central drivers of moral hazard, while monitoring, law enforcement and transparent institutional arrangements are important mechanisms for mitigating it. Competition, risk sharing, organizational culture and time horizon may also shape moral-hazard risks in different contexts. These determinants have potential relevance to halal-related governance, particularly information transparency, compliance, monitoring, certification and third-party verification. This relevance is conceptual rather than an empirical test of the halal industry. Overall, the review integrates cross-industry insights to clarify the determinants of moral hazard and their implications for governance, accountability and transparency, while identifying a basis for future empirical research in halal-related settings.

Keywords— Agency Theory; Moral Hazard; Moral Hazard Determinants; Halal Industry; Governance

INTRODUCTION

Introduced by Jensen and Meckling (1976), Agency Theory provides a theoretical framework for the relationship between the principal and the agent, particularly in relation to resource allocation and decision-making. One longstanding issue in this context is moral hazard, which occurs when actors exploit information asymmetry to pursue their own interests at the expense of principals. It is widespread across industries, from financial markets to agriculture, where hidden actions, incomplete information and misaligned interests can create inefficiencies, losses and systemic risks. The literature identifies several determinants of moral hazard, including information asymmetry, incentive schemes, monitoring and legal enforcement, as well as broader socioeconomic determinants such as competition, culture and risk sharing. Although a substantial evidence base exists, the literature remains fragmented regarding how these determinants can be integrated into a policy-relevant framework. This paper addresses that gap through a comprehensive literature review that identifies the determinants of moral hazard and provides insights into governance practices that can reduce these risks across industries. Although previous studies have discussed information asymmetry, incentive mechanisms and institutional enforcement, most have treated these determinants separately. This study bridges this gap by synthesizing how these variables interact and collectively influence moral hazard across industries.

Agency Theory provides a framework for understanding relationships between principals and agents, particularly when decision-making authority is delegated and the parties have different interests (Jensen and Meckling, 1976). Moral hazard may arise when an agent's actions are not fully observable and the agent can pursue private

interests at the principal's expense. This issue has been discussed across industries, including finance and agriculture, where information asymmetry, misaligned incentives and limited monitoring can create inefficiencies and losses. The literature identifies information, incentives, monitoring and legal enforcement as important determinants, alongside contextual factors such as competition, culture and risk sharing. However, these determinants are often examined separately, making it difficult to understand how they may interact across industries. This review therefore synthesizes the literature on moral-hazard determinants and considers how the resulting conceptual insights may inform governance discussions across industries, including the halal industry.

Conceptually, the nine determinants can be interpreted as operating at different levels of the agency relationship. Information asymmetry affects what principals can observe; incentives influence the agent's motivation to act opportunistically; and monitoring and legal enforcement affect the expected consequences of hidden actions. Competition, risk, time horizon, culture and third-party participation shape the context in which these core agency mechanisms operate. This distinction strengthens the cross-industry synthesis by separating proximate agency mechanisms from the institutional and contextual conditions that may amplify or constrain them (Jensen and Meckling, 1976; Eisenhardt, 1989).

PROBLEM STATEMENT

Agency Theory highlights the inherent conflict between principals and agents arising from divergent interests, with moral hazard remaining a persistent concern. Despite extensive academic research since the seminal work of Jensen and Meckling (1976), moral hazard remains highly relevant in finance, agriculture, insurance and business more broadly. The literature consistently indicates that information asymmetry increases moral-hazard risk and that weak monitoring and misaligned incentives can exacerbate the problem. However, the existing literature is predominantly fragmented, as the determinants of moral hazard are often examined individually rather than within an integrated framework. While some studies focus on information asymmetry and incentive design, others emphasize cultural, institutional or legal factors, resulting in differing conclusions. In addition, cross-sectoral syntheses remain limited in explaining why some industries may be more susceptible to moral hazard than others. This fragmentation creates challenges for policymakers, practitioners and researchers seeking to develop effective governance mechanisms. Therefore, a more integrated synthesis is needed to bring these findings together within a coherent conceptual framework. Such a review can enhance theoretical understanding of agency problems while providing practical insights for mitigating moral hazard across industries. Despite decades of research, the existing literature remains fragmented, with inconsistent findings regarding how determinants interact. This lack of integration limits the development of policy-relevant frameworks for mitigating moral hazard, particularly in high-risk sectors such as finance and agriculture.

Agency Theory explains how conflicts of interest may arise when principals delegate tasks to agents whose actions or information cannot be fully observed. The literature reviewed in this article commonly associates moral-hazard risks with information asymmetry, weak monitoring and incentives that do not align with the principal's objectives. However, studies differ in their industries, contexts, concepts and analytical approaches. Some emphasize information and incentive design, while others examine cultural, institutional or legal conditions. This diversity makes cross-industry comparison difficult unless the determinants are brought together within a clear conceptual structure. The present review addresses this issue by synthesizing the determinants discussed in the literature and organizing them into a framework that can guide further research and governance practice.

The central analytical gap is therefore not the absence of individual determinants, but the limited integration of these determinants into a common explanatory structure. A useful synthesis should distinguish factors that generate opportunities for moral hazard from mechanisms that constrain those opportunities and from contextual conditions that alter their effects. This distinction is particularly important for cross-industry comparison because the same determinant may operate differently depending on contractual design, observability, regulation and risk allocation.

Accordingly, the following literature review moves from the theoretical foundations of Agency Theory and contracting to the cross-industry evidence on specific moral-hazard determinants. This progression links the

research problem and objectives directly to the thematic synthesis developed later in the article.

Research Questions

1.1.1 What are the major determinants of moral hazard identified in the existing literature on Agency Theory?

1.1.2 How do these determinants influence agency problems across industries, and how are they relevant to the halal industry?

Research Objectives

1.1.3 To identify and synthesize the key determinants of moral hazard as a theoretical construct in Agency Theory.

1.1.4 To explain conceptually how these determinants influence agency problems across industries and their relevance to the halal industry.

LITERATURE REVIEW

Agency Theory

Agency Theory describes the interaction between a principal and an agent in which the principal delegates authority and evaluates the actions undertaken by the agent. The theoretical framework assumes that actors pursue their own interests, operate under bounded rationality and are risk averse (Eisenhardt 1989). Principals establish contractual terms and evaluate agent performance, whereas agents seek to meet the principal's requirements in return for incentives or higher compensation. When monitoring is weak, an agent may manipulate information or organisational circumstances to create the impression that performance targets have been achieved.

Jensen and Meckling (1976) describe this relationship as one in which agents possess more and better information than principals, thereby creating information asymmetry. Although principals require information on ownership and operational behaviour, their limited access places them at a relative disadvantage. This asymmetry allows agents to act in ways that do not necessarily maximize principals' interests and may lead to misleading financial reporting, overstated sales or other practices that distort the firm's actual performance.

Principal-agent relationships involve underlying conflicts of interest. For example, decisions that benefit the principal may impose substantial costs on the agent, while the agent may make decisions that impose significant costs on the principal, including monitoring expenditures (Bebchuk and Fried 2004). To address such problems, principals may incur agency costs, including the costs of monitoring, contract enforcement and residual losses, to encourage compliance with agreed objectives (Bu and Cuervo-Cazurra, 2020). These expenditures represent efforts to mitigate moral hazard and align agent behaviour with principal objectives.

Agency costs typically arise from contractual arrangements designed by principals to prevent opportunistic behaviour. Socially optimal outcomes are ideally achieved when complete information is available; in practice, however, this objective is often constrained by limited transparency (Salanie 2005). According to Arifin (2003), agency problems may manifest as high operating costs, reduced profits or fraudulent activities that diminish overall returns.

Finally, Agency Theory emphasizes that both principals and agents seek to maximize their utility. However, because their interests may conflict and because of underlying constraints, the parties may not achieve optimal outcomes (Laffont and Martimort 2001). Agency problems become evident when contractual relationships are violated or when agents exploit hidden opportunities at the principal's expense. Such conflicts have been examined in fields including economics, supply chain management and political science (Eisenhardt 1989). Nevertheless, when transparency is high and hidden actions are absent, agency problems may be reduced because the principal-agent relationship functions more effectively (Jensen and Meckling 1976).

Taken together, Agency Theory provides the causal logic that connects the determinants reviewed in this article. Information asymmetry and hidden action create the opportunity for moral hazard, incentive misalignment creates the motivation for opportunistic behaviour, and monitoring or contractual safeguards can reduce the agent's discretion or alter the consequences of such behaviour. This theoretical logic provides the basis for interpreting the empirical findings across different industries rather than treating the nine determinants as an unstructured list (Jensen and Meckling, 1976; Eisenhardt, 1989).

Contract

In the context of Agency Theory, contracts structure the allocation of benefits, responsibilities and risks between principals and agents. They establish how returns, profit sharing and risk exposure are distributed and provide mechanisms for aligning the agent's behaviour with the principal's objectives. An effective contract therefore seeks to balance incentive provision with an appropriate allocation of risk so that both parties have clearer expectations regarding performance and rewards.

To protect the interests of both parties, principals design contractual arrangements intended to align agent behaviour with agreed objectives. Such arrangements are more effective when relevant information is sufficiently transparent and when responsibilities, incentives and risk allocation are clearly specified. These conditions reduce opportunities for hidden action and provide greater clarity regarding expected performance and rewards.

Jensen and Meckling (1976), define agency relationship as a contract-based relationship where a principal hires an agent to do things and give additional decision-making powers to an agent. However, agents often have a low level of interest in the enterprise or no interest at all; thus, they might extend themselves in terms of their personal gains to the value maximization of the firm, thus creating agency costs. Since both the principals and the agents are trying to optimize utility, it is expected that they will not act in alignment with the ideal goals of the principals and this is what causes the principals to seek to minimize the risks of such opportunistic behavior by offering incentives and spending on monitoring expenses.

Contracts are also formal agreements whereby both the gains and the losses are explicitly divided between principals (people who provide funds) and the agents (executors). The lack of disclosure, especially the non-disclosure of the information about the results of decision-making by the agents, may lead to unethical behaviors and conflicts within interests.

3.3 Principal and Agent in Contracts

According to Jensen and Meckling (1976), agency theory can be divided into two major strands, namely the positive agency theory and the principal agency literature. The two strands discuss the importance of contractual arrangements in regulating relationships between parties that have vested interest and indicate that contractual arrangements help to reduce the agency costs. However, the focus of both strands differs. According to Arifin (2003), the principal-agent literature is generally a conceptual abstraction of mathematical terms and is largely non-empirical focusing on the preferences of agents as well as on information imperfection; the positive agency theory is empirical-based focusing on the mechanisms of contract formation and the impact of both human and physical capital.

Ross (1977) extends the analysis by emphasizing information asymmetry in agency relationships. Vulnerability arises when one party possesses information about activities or outcomes that is unavailable to the other party. In this context, hidden action refers to behaviour that cannot be directly observed and may generate moral hazard, whereas hidden information refers to asymmetric knowledge that may contribute to adverse selection. These information problems can affect production, financing and investment decisions, particularly when incomplete markets intensify the risks associated with moral hazard and adverse selection.

At the beginning of a contractual relationship, the parties may comply with agreed expectations; however, subsequent actions may become difficult for the principal to observe, creating conditions in which moral hazard

can arise. By contrast, adverse selection concerns characteristics or information that are already hidden when the contractual relationship is formed. This distinction reinforces the importance of transparency and appropriate monitoring in reducing information-related agency risks.

3.4 Agency Problems in Contracts

The agency theory deals with some conflicts of interest based on the information asymmetry where the managers are better informed about the internal situations compared to the principals. This is the asymmetry which inhibits the ability of principals in measuring performance and enhances the issue of risk-sharing. The difference in point of view and access to information may induce the agents to present biased or misleading reports and in this way, bring about moral hazard and adverse selection. These are particularly acute in production and financial transactions, especially when it comes to financial agreements.

Agency Theory emphasizes that effective contract design depends not only on incentives and remuneration but also on the quality of information available to the parties. Biased reporting should therefore be minimized so that principals can evaluate agent behaviour more accurately. Presley and Sessions (1994) discuss incentive compatibility as a contractual condition intended to encourage agents to reveal information truthfully.

Financial contracts, especially contracts that involve profit-sharing, are inherently susceptible to agency problems due to information asymmetry. Agents can alter financial information on project performance and therefore, subject principals that supply capital to unnecessary risk. In such arrangements the parties are mutually dependent on nature: on one side, the principal serves as the source of capital and the other, the agent serves as a manager with his expertise and authority to make the decisions.

The authors note that agency problems are experienced when agents perform activities without necessarily being involved in the output of such activities (Melumad, Mookherjee and Reichelstein 1992). Similarly, Stiglitz (2008) argues that imperfect information is one of the main aspects of principal-agency conflicts. Most contracts therefore are faced with an inherent risk of asymmetric information, especially where one of the parties is involved in a form of dishonest behavior.

The agency costs and the monitoring expenses incurred by principals are generated inherently in the contractual relationship (Jensen and Meckling, 1976). Eisenhardt (1989) outlines two major issues: moral hazard whereby agents respond carelessly or do not comply with an agreement and adverse selection whereby agents distort their competencies or attributes. Information asymmetry persists considering the fact that principals may not be able to adequately check their competence in hiring or performance. Under the general principal-agent model, there are three central models, namely, moral hazard, adverse selection and signaling that illustrate the role of information asymmetry in agency problems.

3.5 Moral Hazard

Moral hazard refers to a situation of information asymmetry in a contractual relationship in which the future behaviour of the parties cannot be fully predicted, thereby placing the achievement of contractual objectives at risk. If every potential action were observable, contracts could be designed to exclude undesirable behaviour. In practice, however, unobservable actions and intentions create uncertainty, and moral hazard occurs when one party changes its behaviour after entering the contract in ways that shift future costs to another party.

Moral hazard is special in financial transactions since these contracts are prone to imperfect information, at least in theory. In the principalagent paradigm, there is sharing of gains and losses. The employment contracts are challenging in the event that agents do not act as stipulated by the contract as agency theory is based on the fact that individuals are supposed to act on their self-interest. The stakeholders, who include principals, usually aim at maximising returns and the agents are concerned with the financial reward based on the terms of the contract. Salanie (2005) asserts that the moral hazard is one of the key aspects of information economics, especially when it comes to designing optimal contracts. In the case of asymmetric information shared by agents, the principals are able to come up with contracts that equate the expected marginal returns and marginal cost of effort. With

risk neutrality, principals can take all the risks and agents are perfectly insured and paid regardless of results; therefore, best contracts should be established to exercise risk-sharing efficiency with incentives to agents.

Conflict occurs in cases where the principal and the agent have contrasting interests with respect to the principal who will seek maximised returns and the agent who will seek better incentives. In the case where agents aim to achieve some hidden benefits without due consideration, the contractual relationship does not achieve its objectives thus depicting moral hazard (Bebchuk and Hirst, 2019). This is exhibited in situations where principals are not able to monitor whether agents have taken the right decisions, especially where the actions cannot be observed or what they are stipulated in contracts. An example given in the canon is that of automobile insurance, where the insurance companies have no knowledge of driving behaviour. It has deductibles that are put in place to reduce the risks, as well as monitoring systems. The model of moral hazard under risk aversion, as developed by Grossman and Hart (1983) and Shavell (1979) was enhanced by Holmstrom and Milgrom (1991) and Rogerson (1985) to the repeated environment.

The moral hazard is a critical behavioural problem in the economics of information, which arises when the behaviour of one party alters after the contract in a manner that is detrimental to the other party in an agency problem (Hoppe and Schmitz, 2018). This is seen in insurance companies and the people insured, as this is done through cost-sharing to minimize moral hazard. Since the principal is not able to keep a constant eye on the agent's behaviour there will be arrangements in the contracts aimed at reducing risks. The moral hazard has been studied in the context of claims records and reporting of benefits (Fu and Noguchi, 2019), shared responsibility programmes (Biener et al., 2018) and welfare outcomes of contract design (Dusansky and Koc, 2016).

Moral hazards can be increased in insurance markets through premium subsidies. Feldstein and Friedman (1977) hold that subsidies enhance the demand of insurance and as a result lead to behavioural changes. The link is supported by subsequent research (Cutler and Zeckhauser, 1999; Finkelstein, 2002; Goda, 2011; Finkelstein et al., 2012). Jaspersen and Richter (2015) also emphasise the wealth effects, as the allocation of subsidies and market structure also affect the insured behaviour. Since insurance markets can entail significant spending on subsidies, the effects of moral hazards depend on the design of the system.

Moral hazard is both immoral and against the law as it is a situation that is created when contracts protect people against the effects of their actions. It has been named as one of the primary risk factors of financial stability on the national level. It has contributed to taking excessive risk as it occurred in the Asian financial crisis, Krugman, Obstfeld and Melitz (2012) observe and Pereira da Silva and Yoshitomi (2001) point to the non-transparency of agendas of banks, shareholders and debtors. Several means have been suggested to address moral hazard such as monitoring systems (Zhang et al., 2016), supervisory (Mumtaz, Jadoon and Sohail, 2019) and risk-transfer strategies (Eufinger and Gill, 2016). Investment risk management (Wu and Wu, 2016), banking and fiscal systems (Irwin, 2016), governance and political stability (Dendramis, Tzavalis and Adraktas, 2018) have also considered moral hazards. Besides, industrial scandals also demonstrate how laxity in regulation encourages moral hazard (Naim et al., 2016; Steen, McGrath and Wong, 2016).

Another industry that has a high amount of moral hazard as a result of subsidies is Agriculture. One of the issues that scholars single out is the hidden or unethical production practices (Hirschauer, 2004; Horowitz and Lichtenberg, 1993; Quiggin, Karagiannis and Stanton, 1993; Starbird, 2012; Vincent and Barry, 2017). There are violations of safety standards, excess usage of chemicals (Vincent and Barry, 2017) and food-safety (Starbird, 2012). The causes of such behaviours are that agent actions cannot be monitored at all times (Zhang and Li, 2016). The determinants reported by Sabbaghi (2017) who investigated the state of agricultural facilities in Iran included low income, low mechanisation, low education, small land areas, secondary jobs and the interest rate on loans. Such results confirm that moral hazard is frequently caused by conflicting interests and the inability to monitor.

Outside the agricultural sector, the concept of moral hazard has been applied to the banking industry in which non-performing loans (NPLs) are an indicator of irresponsible lending. The study by Islam and Nishiyama (2019) proves that size, concentration, inflation and economic growth play a great role in NPLs implying the presence of moral hazard following the global financial crisis. Repeated moral hazard has been also analyzed intensively:

Jarque (2010) shows that the rigidity of repeated effort and optimal contracts are similar and Kwon (2006) and Mukoyama and Aysegul (2004) investigate the context of repeated effort. Recursive models are presented by Doepke and Townsend (2006) and Fernandes and Phelan (2000) in order to obtain numerical solutions. Hopenhayn and Jarque, (2010) also look at the firm level moral hazard and reveal that optimal contract with repeated situations includes output sharing that balances various past effort with future pay.

In summary, moral hazard is a major concern within Agency Theory and is evident in insurance, finance, agriculture and corporate governance. It arises when principals are unable to adequately monitor agent behaviour, resulting in conflicts of interest and inefficiencies that require contractual, supervisory and institutional responses.

The cross-industry literature also indicates that moral hazard should not be inferred solely from an adverse outcome. Loan default, high claims, weak compliance or excessive risk taking may be consistent with moral hazard, but the agency interpretation requires a mechanism involving unobservable behaviour, asymmetric information or incentives that permit one party to shift costs to another. Maintaining this distinction is important when comparing findings from finance, insurance, agriculture and business, where outcome measures and contractual settings differ substantially.

Empirical Findings On Moral Hazard Across Industries

Further studies have examined the determinants of moral hazard across industries and economic settings. The factors most frequently discussed in the reviewed literature are as follows:

4.1 Information

Information asymmetry has always been found to be one of the key factors that determine moral hazard in various sectors by the use of empirical studies. Researchers state that when there are gaps in the availability of information, asymmetry or a predisposition to bias, this creates the chance of opportunistic behavior, but when information is available and disseminated systematically, it reduces the risk of opportunistic behavior.

In the financial industry, Flatnes (2021) suggested that moral hazard can be mitigated by using past data on their credit, provided that the borrower consents. This suggestion was supported by Wu and Wu (2016), who showed that credit-rating models improve the situation in the loan markets in terms of transparency and minimizing risk. Naim et al. (2016) in business research emphasized Shariah compliance clauses in partnership contract by using the example that capital providers might insist that firms disclose misconduct resulting in losses and thus limit moral hazard among partners. Similarly, Kapounek (2017) confirmed the importance of institutional settings in developing bank lending and his results show that information sharing has reduced corruption and moral hazard in lending operations. Ward and Gabel (2019) overlooked this fact by indicating that lawmakers have the ability to decrease moral hazard in judicial reviews in case they have the correct information on the costs and policy. Elsewhere in labour studies, Heath (2018) also supported the exchange of information and demonstrated that referrals can prevent moral hazard in employee recruitment.

This is particularly accurate in the case of finance and the consequences of such lack of information. Similarly, Maryn, Akin and Peydro (2020) studied U.S. bank stock returns during the 2008 crisis and discovered that the concealment of information through insiders negatively impacted the performance of the bank and the economy in general. Similarly, Huang, Li and Zhang (2019) examined the interaction of information, legal frameworks and agency problems in IPO governance and emphasized the importance of transparency as an important protection. These findings are supported by business research: Marinovic and Povel (2017) showed that ineffective appointments and reduced efficiency were the outcomes of misreporting by the unreliable managers, whereas Gonzalo, San-Jose and Retolaza (2021) in mixed methods studies revealed that the information issues were a central cause of the moral hazard in companies.

Similar evidence is offered by other sectors. Chen and Jiang (2019) demonstrated that in-vehicle driver-behavior information may be used to create the best insurance price to minimize moral hazard in transportation. Panicker

and Amudha (2020) also found in the labour literature that inadequate or biased information suppresses employee performance, but they stated that companies should only reveal information of optimal value and not information arbitrarily. In these industries, transparency was useful, restricting the risks of moral hazards.

Although the studies converge on the importance of information, their objectives, methods and contexts differ. Akin, Maryn and Peydro (2020) focus on insider information in banking during a financial crisis, Huang, Li and Zhang (2019) examine IPO governance, Marinovic and Povel (2017) consider managerial performance manipulation, Gonzalo, San-Jose and Retolaza (2021) examine information-related issues in firms, Chen and Jiang (2019) address monitoring information in insurance, and Panicker and Amudha (2020) examine employee informativeness and performance. The methodological diversity across these studies reinforces the need to interpret their findings as context-specific evidence rather than as directly comparable estimates of moral hazard.

In all these different contexts, this has led to a consistent conclusion that inadequate or selective information is a major cause of moral hazard and that adequate reliable and transparent information would contain it. Taken together, these research works present an impressive amount of evidence that better information conditions can help to decrease moral hazard and to improve performance in the various industries.

4.2 Incentives

Incentives have been well known as one of the major factors of moral hazard and research in various fields has indicated that misplaced or excessive incentives usually lead to opportunistic or unethical behavior.

Government-subsidised crop insurance in agriculture, risk-taking behaviors were identified as insured farmers in Northern China where farmers were more concerned with the use of fertilizers and herbicides (Le et al., 2020). Equally, Boyer and Smith (2019) have noted that corn farmers reduced production efforts and ignored the possibility of incurring losses because of the existence of insurance coverage. The two studies revealed that insurance plans that do not cover non-systematic risks may be used to counter this behaviour.

Similar evidence is provided in the insurance sector. Fu and Noguchi (2019) reported that such high coverage, especially of low or no co-payment rates, promoted excessive consumption of healthcare services. Meanwhile, Zhang and Shi (2017) concluded that the understating of the systematic risks in the deposit-insurance premiums of China led to the inappropriate incentives, which generated an increased moral hazard in the banking industry. This led to their analysis, which was grounded on daily stock returns, market indices and financial data, pointing at the risks of incentives structures that were misaligned.

In Finance, Jarungrattanapong (2020) found that joint liability and dynamic incentive arrangements in borrower arrangements enhanced excess risk taking and consequently, moral hazard. In the same breath, Zhang et al. (2016) demonstrated that hasty lending habits in Chinese banks had an effect of instability in the system. The data of Greece also supported this tendency: Dendramis, Tzavalis and Adraktas (2018) have discovered that the moral hazard of borrowers and the growth of defaults were stimulated by loan moratoriums in the period of the economic crisis. All these findings put together the presence of strong risk management as a way of deterring opportunistic behaviour.

It has also been studied in business literature how moral hazard can be minimized with the help of incentives. According to Gonzalez-Ricoy (2020), giving employees rights to control and own increased moral hazard than the traditional performance-based bonuses. In line with this, Darrough, Kim and Zur (2019) and Du et al. (2019) discovered that a system of incentives based on payments and penalties was related adversely to productivity loss and opportunistic behaviour. Their findings highlighted that rewards should have bigger weight than conjectural gains and external costs. Similarly, Wang, Cui and Liu (2018) demonstrated that differentiated government guarantees based on the profile of the clients decreased the moral hazard based on the mutual preferences.

More financial evidence supports the significance of properly adjusted incentive systems. Using the Besanko and Thakor model, Wang, Lee and Ko (2020) showed that loan guarantees issued to risky borrowers lowered the

loan defaults and credit rationing, increasing the welfare. Eufinger and Gill (2017) also demonstrated that moral hazard associated with risk-taking incentives among bank managers was alleviated as it decreased the dependency on shareholders and minimized manipulation of information. Yoshino and Taghizadeh-Hesary (2019) also stated that an optimally determined credit guarantee ratios reduced the information asymmetry between SMEs and banks and suggested incentive structures to match macro-economic conditions to stabilize the loans.

Similar insights can be provided through healthcare research. Yu and Zhu (2018) discovered that medical incentives targeted at poor people in China did not only reduce the financial burden but also reduced the number of individuals who indulged in harmful habits like smoking, drinking, etc. In spite of the fact that they concentrate on health and not finance their results support the overall idea that the incentives have to be carefully designed to avoid moral hazard.

The comparative studies between these studies prove that there is consistent evidence to take note of that misaligned or excessive incentives increase moral hazard in situations that involve agriculture, healthcare, banking and insurance. As an example, Jarungrattanapong (2020) and Zhang et al. (2016) both attributed risky behaviour to excessive financial incentives (although by different methods): the former used experimental techniques and the latter panel regression analysis. Similarly, Dendramis, Tzavalis and Adraktas (2018) used survival analysis to examine loan defaults and Fu and Noguchi (2019) used the propensity -score matching in the setting of long-term care insurance in Japan. Even though there is methodological diversity in the findings the same conclusion is reached.

In short, incentives form a key determinant of moral hazard. Although there have been studies that reveal the effectiveness of well-designed incentives in reducing opportunistic behaviour, most studies have pointed out inefficiencies in incentives that encourage moral hazard in all industries. This highlights the importance of careful tuning of incentive mechanisms to bring the interests of the principal and agents into one accord to minimise the risks of unethical and opportunistic behaviours.

4.3 Monitoring

It has been noted that monitoring plays a central role in alleviating moral hazards in various industries. Shahzad et al. (2019) discussed the effects of monitoring mechanisms (financial reporting quality and audit quality) on investment efficiency in the financial sphere. Their findings showed that successful monitoring minimizes information asymmetry and risk thus eliminating moral hazard. On the same note, Mumtaz, Jadoon and Sohail (2019) established that moral hazard due to moral risk-taking by banks can be checked by means of monitoring and they identified that more vigorous monitoring contingencies, especially by central banks boost investor confidence. Nevertheless, Gelade and Guirkinger (2018) stated that monitoring should not be isolated and it needs to be supported with penalties being inflicted to encourage efficacy.

Other sectors other than the financial one depict the worthiness of monitoring. Wang et al. (2019) also revealed in the business world that ontological questioning used to derive supply-chain controls can help mitigate the issue of moral hazard caused by information asymmetry. They promoted the application of four meta-classes, including organisation, resource, task and goal as the monitoring queries in supply chains. In the environmental case, Liu and Song (2017) illustrated that the supervisory contracts, which require such recyclers to reveal their true green-development rates, had the power to reduce the opacities and alleviate moral hazard in the recycling procedures.

Bouheni (2014) offers a wider scope of analysis, comparing the risk-taking by banks in European countries based on two-step dynamic panel-data. The results indicated that regulation and supervision contribute significantly to decreasing the risk-taking of banks and, in this case, balanced actions are necessary. A boosted regulation will also contribute towards better stability, though overdependence on deposit insurances in the absence of sufficient capital requirements can in itself create moral hazard.

Combined, this research helps to emphasize the importance of monitoring in countering the issues of

information-related risks that are one of the main causes of moral hazard. Both Shahzad et al. (2019) and Mumtaz, Jadoon and Sohail (2019) explored the banking settings and used regression techniques to prove that monitoring enhances reporting and quality of audits and minimizes moral hazard. Wang et al. (2019) further analyzed supply chains with the help of an ontology-based algorithm to include supply chains but used a two-stage closed-loop collaboration with recycling and demonstrated the effectiveness of contractual monitoring to address moral hazard in environmental systems. It is important to note that Gelade and Guirkinger (2018) are the only ones who pointed out that monitoring should be accompanied by penalties to ensure maximum effectiveness.

Overall, the evidence across finance, business and environmental studies indicates that monitoring is a key mechanism for mitigating moral hazard. Although monitoring approaches differ, ranging from financial reporting and auditing to supply-chain algorithms and supervisory contracts, the literature generally indicates that strong monitoring can reduce moral hazard.

4.4 Punishment and Law

Much has been said about punishment and legal enforcement as ways of curbing moral hazards. Xu et al. (2020) studied their position in the drug supply chain and discovered that their presence in the chain was secured by the presence of enforcement measures: the user-fee schedules or penalties related to the submission of post-market studies late, which were highly effective to achieve transparency and ensure the lack of information asymmetry. On the contrary, Chen (2021) emphasized possible shortcomings, demonstrating that the policy of the compulsory inclusion of the population in health-saving accounts, which are designed to eliminate moral hazard when organizing medical prices, was ineffective and in certain situations, even increased the problem. These opposite results demonstrate that although the use of penalties may be effective in enforcing such behaviors, obligatory provisions do not necessarily apply to reducing moral risk.

Huang, Li and Zhang (2019) examined the IPO market by applying the OLS regression and the legal environment was used as the independent variable in the financial sector. They also found that tighter legal protection leads to information credibility and hence trust in IPO markets and moral hazard.

The interrelationship between punishment and law, as well as the general literature concerning incentives and monitoring, is clearly visible. The OLS regression and empirical analysis were also used by both Huang, Li and Zhang (2019) and Darrough, Kim and Zur (2019), though in the context of different issues, namely IPO markets and unemployment risk and firm productivity. In like manner, Du et al. (2019) and Gelade and Gelade (2018) used an empirical approach but predetermined different mechanisms: the former focused on incentives and penalties in integrated project teams and the latter focused on monitoring in joint credit groups in Burkina Faso. These differences notwithstanding, both of them came up with the conclusion that penalties and effective supervision are the key to reducing moral hazard.

One more comparison may be made between Gelade and Guirkinger (2018) and Xu et al. (2020). Where Gelade and Guirkinger (2018) focused on the practices of monitoring a credit group, Xu et al. (2020) focused on FDA non-compliance in drug supply, as penalties and legal enforcement are crucial. In spite of the similarity in the use of the empirical statistical approach, the scope and application of both studies were different.

In general, these studies show that punishment and law, as well as monitoring and incentives, are some of the key tools in curbing moral hazard. Although the concentration of interests and approaches may differ, it is always emphasized in the evidence that the combination of legal enforcement, penalties and management is the tool that will help to efficiently solve the problem of information asymmetry and minimize the threat of moral hazard.

4.5 Competition

Studies have also focused on how competition has contributed to the development of moral hazard. The study by Steen, McGrath and Wong (2016) identified the financial scandals in the Australian financial sector and revealed that the high level of market concentration stimulated risk-taking (excessive) thus promoting the moral

hazard. On the same note, Gonzalo, San-Jose and Retolaza (2021) using 78 in-depth interviews with 27 Asian countries financial institutions proved that concentrated market power leads to moral hazard by allowing large firms to use their position of dominance and to direct risks to others. Their results highlight the way in which companies that are deemed to be too big to fail are encouraged to act improperly or opportunistically.

In line with this, Hsieh and Lee (2020) showed that the size of the firm has a significant effect on moral hazard with regard to deposit insurance and the creation of liquidity. They discovered that the smaller banks tended to be less affected by the moral hazard and the larger ones used their resources and organizational flexibility to take part in more risky activities or to challenge the external regulation.

The same can be said about other sectors besides finance. Kreier (2019) found that the presence of high market concentration in the U.S. healthcare sector increased the cost of services provided by the healthcare providers, which created supply-side moral hazard. In the agricultural sector, Sabbaghi (2017) has studied farming facilities in Dezful Township, Iran and found that there are numerous causes of moral hazard among them low income, low level of mechanization, low level of education, age and off-farm employment, small size of land and high rates of interest of loans.

Altogether, this research suggests market concentration and the size of the firm are the most important determinants of moral hazard. In the case of finance, healthcare or agriculture, both regulatory and structural disadvantage and the presence of dominant market power can encourage opportunistic behavior and risk elevation of moral hazard.

4.6 Time Horizon

Another factor that has been found to affect moral hazard is time horizon. Using the example of taxi accidents, Tay and Choi (2016) demonstrated that the driver who does not own a car is more inclined to drive in a reckless manner because he or she will not incur all the costs of the damages. This observation shows that opportunistic behavior is promoted by short or limited time horizons. In comparison, Gonzalo, San-Jose and Retolaza (2021) concluded that probationary or temporarily hired employees usually work more intensively at the beginning but their performance decreases as soon as they can get permanent jobs. Their work points to the fact that long term job security may promote complacency and create moral hazard.

Overall, these studies indicate that both short- and long-term horizons may contribute to moral hazard by either shifting responsibility in the short term or reducing motivation over the longer term.

4.7 Risk

The issue of risk management is important in minimization of moral hazard since it dictates the way risks are to be distributed among the parties. Thonnes (2019) discovered in the insurance market that moral hazard in health insurance is minimized by putting more risk on the clients. An example is the application of mechanisms like premium refunds or client loans to buy insurance premiums, which were found to soften the opportunistic behavior. Contrastingly, the authors of Biener et al. (2018) who took the principal and the agent positions stated that a more efficient mechanism that can be adopted is risk-sharing between insurers and clients. In contrast to Thonnes (2019), who conducted the research with the main attention to the insurer point of view, Biener et al. (2018) stressed the importance of the balanced allocation of risks in order to organize the moral hazard.

Gao et al. (2016) defended the stance of Biener et al. (2018) in the field of business, especially in supply chain management. Their research established that risk-sharing can be useful in eliminating information gaps between the supply chain agents, particularly in situations where product faults complicate the issue of responsibility. They suggested partial cost allocation where the manufacturer and suppliers will be divided into costs at dissimilar rates based on the root cause of the defect. The strategy proved to be the best way of mitigating moral hazard among supply chains.

4.8 Third Parties

A number of works have highlighted the importance of involvement of third parties in the alleviation of moral hazard. Shen et al. (2020) investigated the governance in Chinese state-owned enterprises (SOEs) with the emphasis on the centralization/decentralization factor. Their results implied that middle ground parties, like state-owned investment corporations, between the governance level can be an effective way to eliminate managerial demotivation and decrease moral hazard.

In like manner, the mechanism of discouraging unethical behavior by using intermediaries was suggested by Song, Park and Lee (2019). Their research on geographic diversification and firm risk found out that franchising is an effective device of moral hazard avoidance. Although this could be viewed as a business operations dimension, Bhattacharya, Gupta and Hasija (2018) noted that single sourcing is more efficient than multi-sourcing in reducing moral hazard, since it isolates chances of opportunistic behavior.

Conversely, Chang et al. (2020) examined technology transfer chains as a tool of facilitating collaboration between investors and firms. Their findings indicated that decentralization of decision making facilitated by portfolio contracts was the best method in harmonizing the interests of the parties. Comparatively, the use of traditional licensing contracts where royalty fees and equity payments are made has been seen to be less effective in eliminating moral hazard.

4.9 Culture

Moral hazard has also been proved to be culturally affected. Zhang and Li (2016) studied how the traditional culture would influence the behavior of farmers in China. Their results showed that cultural norms that erode sustainable farming practices highly affected moral hazards like failing to meet the production standards, overuse of pesticides and over-application of additives. In this regard, Balomenou et al. (2019) suggested that moral hazard in agriculture is most probable to occur once there are no effective controls, because farmers will take advantage of the chances to act according to the cultural tendencies existing in society.

Overall, the reviewed literature covers lending, insurance, enterprise management, agriculture and other settings, using different data and analytical approaches. The studies identify context-specific relationships among information, incentives, monitoring, regulation and other socioeconomic or institutional factors. Because their definitions and methods vary, the synthesis emphasizes recurring themes and conceptual relationships rather than assuming that all studies provide equivalent or universally generalizable evidence.

Across the nine themes, three broader patterns emerge from the reviewed studies. First, information asymmetry and incentive misalignment represent recurring sources of agency risk because they affect the principal's ability to observe behaviour and the agent's motivation to pursue private benefits. Second, monitoring and legal enforcement operate primarily as governance responses that can restrict hidden action or increase its expected cost. Third, competition, risk allocation, time horizon, culture and third-party arrangements are more context dependent and may strengthen or weaken these relationships across industries. This layered interpretation provides a clearer theoretical basis for the conceptual framework presented below.

These patterns provide the transition from the empirical review to the conceptual framework: the framework consolidates recurring evidence into a structured interpretation of drivers, mitigating mechanisms and contextual influences without treating any of these categories as statistical moderators or empirically estimated causal effects.

This line of enquiry can be said to have its origin in previous studies by Humphries and Wallace (1980) and Smith and Parker (1980) who investigated moral offences and crime through the prism of economics. It is based on this that the notion of a moral hazard as defined by Jensen and Meckling (1976) has been further implemented in various fields. According to Mohd Ali et al. (2024), in 2016-2021 there was a significant amount of research conducted on the nature, determinants and prevention of moral hazard in different disciplines. Systematic reviews that use PRISMA model still prove that business and finance take dominance of the literature and then

agriculture, healthcare and insurance, with further concern of transportation, labour, environment, law, the public sector and science and technology.

CONCEPTUAL FRAMEWORK

The theoretical framework specifies the variables associated with moral hazard as identified across the domains covered in the reviewed literature. Insights from business, finance, agriculture, healthcare, insurance and other fields are integrated into this framework to provide a systematic representation of how different variables may contribute to the emergence and persistence of moral hazard. By bringing these determinants together, the framework highlights the interrelationships among economic, cultural, institutional and governance factors, thereby providing a holistic basis for understanding and mitigating moral hazard across industries.

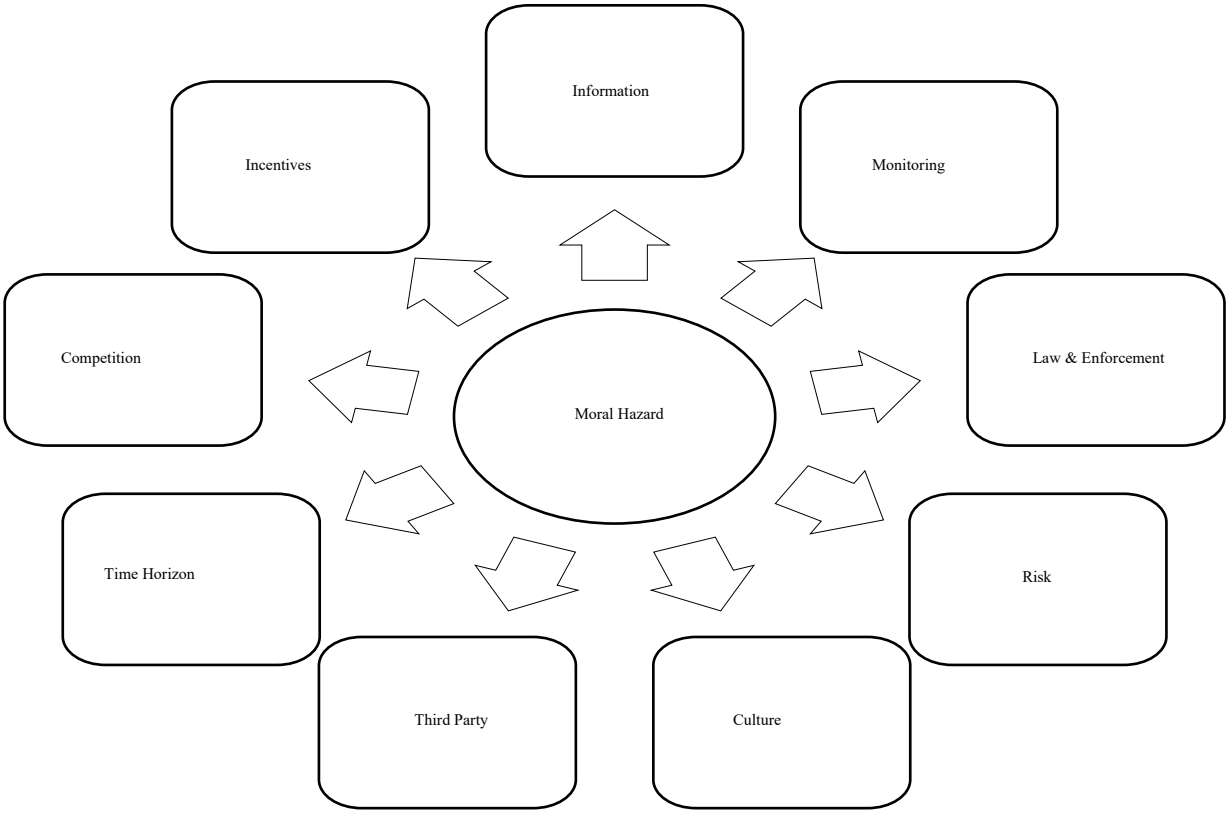


Figure 1. Mapping of Study Variables

The framework organizes nine determinants discussed in the reviewed literature: information, incentives, monitoring, law and enforcement, competition, risk, time horizon, culture and third-party involvement. These determinants are not assumed to operate in the same direction. Information asymmetry and incentive misalignment are interpreted primarily as potential drivers of moral-hazard risk; monitoring and enforcement are interpreted primarily as mitigating mechanisms; and competition, risk, time horizon, culture and third-party involvement are treated as context-dependent influences. Through the lens of Agency Theory, this organization clarifies how conflicts of interest, limited observability and governance arrangements can shape principal-agent relationships across industries.

Across the reviewed literature, information asymmetry and incentive misalignment recur as important sources of moral-hazard risk, whereas monitoring and legal enforcement are commonly discussed as mechanisms for reducing such risk. Competition, risk sharing, culture, time horizon and third-party governance arrangements provide additional contextual conditions that may influence how agency problems emerge and are managed across industries.

Overall, the review supports the usefulness of Agency Theory for interpreting moral hazard across sectors. The synthesis identifies information asymmetry and misaligned incentives as recurring drivers, while monitoring and

law enforcement are commonly discussed as mitigating mechanisms. Competition, risk, time horizon, culture and third-party participation may shape how these relationships operate across industries.

Figure 2 presents the proposed conceptual relationships synthesized from the literature. Information asymmetry can increase moral-hazard risk by limiting the principal's ability to observe agent behaviour, whereas monitoring can reduce that information gap. Incentive alignment can reduce the motivation for opportunistic behaviour, while weak or poorly enforced rules may allow such behaviour to persist. Competition, risk, time horizon, culture and third-party participation are treated as contextual influences whose effects may differ by industry and institutional setting. These relationships are propositions for conceptual interpretation, not causal effects estimated by the present review.

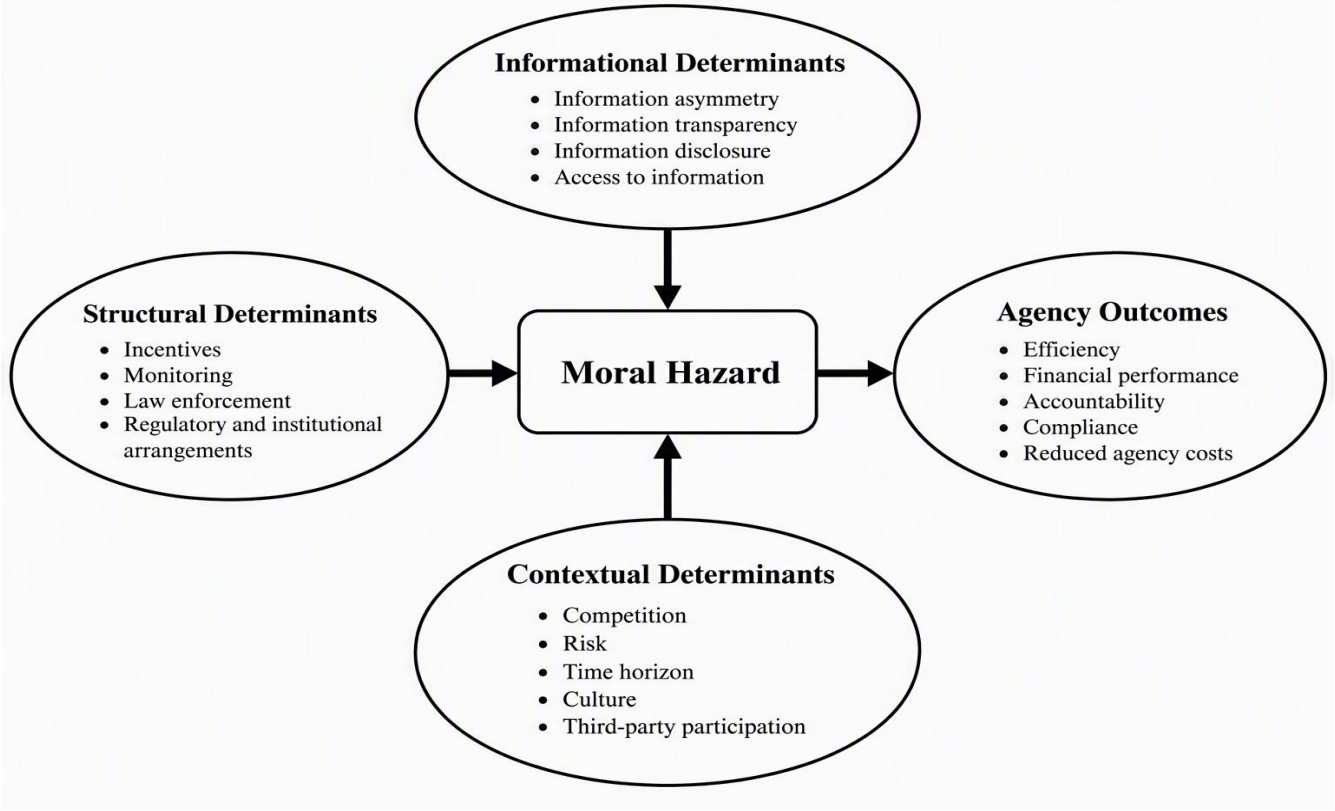


Figure 2. Conceptual Framework

Operational interpretation of the framework: (i) informational factors refer to the availability, accuracy and observability of information, including information asymmetry and monitoring; (ii) structural or governance mechanisms refer to incentive design, law enforcement and the participation of third parties; and (iii) contextual factors refer to competition, risk, time horizon and culture. Moral hazard is the central behavioural concern, while agency outcomes refer to the resulting contractual or organizational consequences. These categories organize the reviewed literature and are not validated measurement scales.

The framework therefore proposes a sequence rather than a simple list of determinants: informational, structural and contextual conditions shape the opportunity and incentives for hidden action; moral hazard represents the resulting agency concern; and agency outcomes reflect the contractual or organizational consequences. This sequencing also clarifies that monitoring and enforcement are not expected to increase moral hazard in the same manner as information asymmetry or misaligned incentives. Instead, their theoretical role is primarily mitigating, although their effectiveness remains contingent on institutional design and implementation.

This article adopts a narrative and thematic literature-review approach to examine moral-hazard determinants across industries. The review synthesizes and interprets the literature through the lens of Agency Theory, with emphasis on recurring determinants, differences in their conceptual roles and their relevance across industry settings.

The thematic synthesis is organized around nine determinants identified in the reviewed literature: information, incentives, monitoring, law enforcement, competition, risk, time horizon, culture and third-party participation. Rather than treating the determinants as equivalent predictors, the synthesis distinguishes potential drivers of moral hazard, mitigating governance mechanisms and context-dependent influences. The discussion then compares how these themes are represented across the industries covered in the review. The relevance to the halal industry is developed as a conceptual extension of the cross-industry evidence, not as direct empirical evidence from halal firms or supply chains.

For interpretive consistency, the synthesis treats evidence as stronger when a study directly links an agency mechanism to behaviour and more cautiously when moral hazard is inferred from outcomes such as default, risk taking or non-compliance. This distinction helps avoid treating all adverse outcomes as equivalent evidence of moral hazard and supports more careful comparison across heterogeneous industries and methods.

Table 1. Summary of Literature Review

Study/Research	**Variable**								
Author/Year	**Information**	**Incentive**	**Monitoring**	**Punishment & Law**	**Competition**	**Time Period**	**Risk**	**Third Party**	**Culture**
Akin, Maryn & Peydro (2020)	/								
Huang, Li & Zhang (2019)	/			/					
Jarungrattanapong (2020)		/							
Zhang & Li (2016)		/							/
Dendramis, Tzavalis & Adraktas (2018)		/							
Zhang & Shi (2017)		/							
Wang, Lee & Ko (2020)		/							
Eufinger & Gill (2017)		/							
Yoshino & Taghizadeh-Hesary (2019)		/							
Shahzad et al. (2019)			/						
Mumtaz, Jadoon & Sohail (2019)			/						
Bouheni (2014)			/						
Le et al. (2020)		/							
Boyer & Smith (2019)		/							
Liu & Song (2017)	/								
Gelade & Guirkinger (2018)	/		/						
Kreier (2019)		/			/				
Fu & Noguchi (2019)		/							
Yu & Zhu (2018)		/							
Marinovic & Povel (2017)	/								
Gonzalo, San-Jose & Retolaza (2021)	/				/	/			
Gonzalez-Ricoy (2020)		/							
Wang et al. (2019)	/								
Darrough, Kim & Zur (2019)		/							
Du et al. (2019)		/	/	/					
Xu et al. (2020)	/	/	/	/					
Chen & Jiang (2019)	/								
Panicker & Amudha (2020)	/								
Kefeli & Jones (2012)									
Arifn, Sugiyanto & Widodo (2018)									
Castillo, Mora-Valencia & Perote (2022)									

Mohd Ali et al. (2025)									
Islam & Nishiyama (2019)									
Tay & Choi (2016)						/			
Steen et al. (2016)					/				
Hsieh & Lee (2020)					/				
Sabbaghi (2017)					/				
Thonnes (2019)							/		
Biener (2018)							/		
Gao et al (2016)							/		
Shen et al. (2020)								/	
Song, Park & Lee (2019)								/	
Bhattacharya, Gupta & Hasija (2018)								/	
Chang et al. (2020)								/	
Tieman, van der Vorst & Che Ghazali (2012)	/		/				/		
Mohamed, Abdul Rahim & Ma'aram (2021)	/		/					/	
Ali et al. (2022)	/		/					/	
Rajendran, Kamarulzaman & Abd Rahman (2024)			/						/

Table 2. Field of Literature Review

Study/Research	**Field/Industry**						
Author/Year	**Banking & Finance**	**Agriculture & Environment**	**Insurance**	**Health**	**Business**	**Transportation & Labor**	**Halal Industry**
Akin, Maryn & Peydro (2020)	/						
Huang, Li & Zhang (2019)	/						
Jarungrattanapong (2020)	/						
Zhang & Li (2016)	/	/					
Dendramis, Tzavalis & Adraktas (2018)	/						
Zhang & Shi (2017)	/						
Wang, Lee & Ko (2020)	/						
Eufinger & Gill (2017)	/						
Yoshino & Taghizadeh-Hesary (2019)	/						
Shahzad et al. (2019)	/						
Mumtaz, Jadoon & Sohail (2019)	/						
Bouheni (2014)	/						
Huang, Li & Zhang (2019)	/						
Le et al. (2020)		/					
Boyer & Smith (2019)		/					
Liu & Song (2017)		/					
Gelade & Guirkinger (2018)		/					
Kreier (2019)			/	/			
Fu & Noguchi (2019)			/				
Yu & Zhu (2018)				/			
Marinovic & Povel (2017)					/		
Gonzalo, San-Jose & Retolaza (2021)					/		
Gonzalez-Ricoy (2020)					/		
Wang et al. (2019)					/		

Darrough, Kim & Zur (2019)					/		
Du et al. (2019)					/		
Xu et al. (2020)					/		
Chen & Jiang (2019)						/	
Panicker & Amudha (2020)						/	
Kefeli & Jones (2012)				/			
Arifn, Sugiyanto & Widodo (2018)	/						
Castillo, Mora-Valencia & Perote (2022)	/						
Islam & Nishiyama (2019)	/						
Jarque (2010)					/		
Kwon (2006)					/		
Mukoyama & Aysegul (2004)					/		
Doepke & Townsend (2006)					/		
Fernandes & Phelan (2000)					/		
Hopenhayn & Jarque (2010)						/	
Tay & Choi (2016)						/	
Gonzalo et al. (2021)	/						
Steen et al. (2016)	/						
Hsieh & Lee (2020)	/						
Sabbaghi (2017)		/					
Thonnes (2019)			/				
Biener (2018)			/				
Gao et al (2016)			/				
Shen et al. (2020)	/						
Song, Park & Lee (2019)					/		
Bhattacharya, Gupta & Hasija (2018)					/		
Chang et al. (2020)	/				/		
Mohd Ali et al. (2024)	/	/	/	/	/	/	
Tieman, van der Vorst & Che Ghazali (2012)							/
Mohamed, Abdul Rahim & Ma'aram (2021)							/
Ali et al. (2022)							/
Rajendran, Kamarulzaman & Abd Rahman (2024)							/

Table 3. Summary of Moral Hazard Issues Across Industries

FIELD/ INDUSTRY	MORAL HAZARD ISSUE	RELEVANCE TO THE HALAL INDUSTRY
Banking & Finance	Managers and investors often take higher risks because they believe any losses will be covered by deposit insurance or government support.	Information transparency, Shariah-compliant financial governance, monitoring and accountability are relevant to reducing agency risks in halal-related financial transactions.
Insurance	Policyholders may behave carelessly or make excessive claims because they are protected by insurance coverage.	Halal assurance requires accurate disclosure of ingredients, processes and certification status; monitoring helps reduce hidden actions and non-compliant practices.
Agriculture & Environment	Weak monitoring of subsidies or grants leads to fund misuse and poor management of natural resources.	Traceability, monitoring and clear responsibility for subsidised inputs, production practices and environmental controls support halal integrity and compliance.
Health Sector	Healthcare providers may overcharge or recommend unnecessary treatments due to weak control and profit motives.	Information transparency, professional accountability and effective monitoring are relevant where health-related products or services require halal assurance.
Business & Entrepreneurship	Managers sometimes prioritize personal interests over company objectives, reducing trust and overall performance.	Aligned incentives, internal monitoring and an organisational culture of compliance can reduce opportunistic behaviour and strengthen halal governance.
Transportation & Labor	Outsourcing and third-party contracts reduce accountability and may increase operational or safety risks.	Third-party logistics, segregation, handling, traceability and monitoring are relevant to maintaining halal integrity across transportation and labour-intensive operations.
Overall Observation	The level of moral hazard varies depending on industry structure, legal enforcement and strength of monitoring systems.	The same nine determinants provide a governance lens for halal industry settings, particularly information, incentives, monitoring, enforcement, competition, time horizon, risk, third parties and culture.

This table summarizes selected examples already discussed in the manuscript. It is illustrative rather than exhaustive; methods are described only where stated in the article, and the final column identifies the scope boundary for interpreting each example.

The comparison also shows why the relevance to the halal industry should be interpreted through governance mechanisms rather than assumed sectoral equivalence. In halal-related settings, information disclosure, traceability, monitoring, certification and third-party verification can be examined as institutional arrangements that affect observability and accountability. The relationship with moral hazard should therefore be empirically tested within specific halal supply-chain or governance contexts rather than inferred directly from evidence in banking, insurance or agriculture (Aigbogun et al., 2016; Tieman, van der Vorst and Che Ghazali, 2012; Mohamed, Abdul Rahim and Ma'aram, 2021; Ali et al., 2022; Rajendran, Kamarulzaman and Abd Rahman, 2024).

Table 4. Illustrative Characteristics of Studies Discussed in the Review

STUDY/ CONTEXT	INDUSTRY OR SETTING	METHOD OR EVIDENCE DESCRIBED IN THE ARTICLE	MAIN FOCUS / FINDING REPORTED IN THE ARTICLE	INTERPRETIVE BOUNDARY IN THIS REVIEW
Arifn, Sugiyanto and Widodo (2018)	Micro and small enterprise debtors using bank data	Factor analysis, as described in the manuscript	Assesses moral-hazard levels and discusses their relationship with loan default.	Bank-data context; findings depend on the study's data and operational definition.
Zhang and Li (2016)	Farmers and crop production in China	Empirical study; the method is not specified in the manuscript text	Examines the relationship between traditional culture and production behaviour, including standards and chemical use.	Agricultural and cultural context; the relationship should not be generalized to all sectors without further evidence.
Thonnes (2019)	German health-insurance market	Empirical evidence, as indicated by the study title and manuscript discussion	Examines ex-post moral hazard in health insurance.	Health-insurance context; the manuscript does not provide enough detail here to compare its estimates with other sectors.
Gao et al. (2016)	Supply-chain management	Method not specified in the manuscript text	Discusses risk-sharing as a way to address information gaps and allocate costs according to the source of product defects.	Supply-chain context; the governance implications are relevant for comparison but do not constitute direct empirical evidence from halal supply chains.

CONCLUSION AND DISCUSSION

This review synthesizes literature on moral-hazard determinants through the lens of Agency Theory and considers how these determinants relate to agency problems across industries. The thematic synthesis identifies nine determinants discussed in the literature: information, incentives, monitoring, law enforcement, competition, risk, time horizon, culture and third-party participation. These themes are organized into a conceptual framework to make their proposed relationships more explicit. Because the review is narrative and thematic rather than PRISMA-based, the framework should be understood as a synthesis of the literature reviewed, not as the result of exhaustive systematic screening or statistical aggregation.

The review also develops a conceptual interpretation of how these determinants may influence agency problems in finance, agriculture, insurance, business and other settings covered by the literature. Moral hazard is not treated as the result of a single factor; rather, information, incentives and monitoring interact with structural and contextual conditions. Differences in research designs, definitions and industry settings mean that findings should be interpreted in context, and not all observed compliance failures, loan defaults or risk-taking outcomes can automatically be attributed to moral hazard.

The theoretical contribution of this review is the organization of dispersed cross-industry discussions into a single conceptual framework. Information asymmetry and incentive misalignment are presented as recurring drivers, monitoring and enforcement as potential mitigating mechanisms, and competition, risk, time horizon, culture and third-party participation as contextual influences. These relationships provide a basis for further theoretical refinement and empirical testing; they are not causal effects established by this review itself.

A further contribution is the distinction between drivers, mitigating mechanisms and contextual influences. This distinction prevents the nine determinants from being interpreted as having identical directional effects. Information asymmetry and incentive misalignment are theorized primarily as drivers; monitoring and

enforcement function primarily as safeguards; and competition, risk, time horizon, culture and third-party participation condition how agency relationships operate. This layered interpretation offers testable propositions for future empirical research while remaining consistent with the narrative nature of the present review.

From a managerial perspective, the findings provide practical guidance for organizations seeking to mitigate agency problems. The synthesized determinants can help managers identify areas in which moral-hazard risk is most pronounced and adopt appropriate strategies, including performance-based incentives, transparent reporting and strengthened internal monitoring. The conceptual model may also serve as a diagnostic tool for strengthening accountability and aligning agent behaviour with organisational objectives.

At the policy level, the findings highlight the importance of effective legal enforcement, regulation and clear governance structures. These findings can guide policymakers in strengthening disclosure requirements, promoting ethical behaviour and establishing independent monitoring mechanisms. By addressing information asymmetry and incentive structures, policy reforms can enhance accountability, reduce inefficiency and strengthen trust in economic institutions across industries.

In summary, this review identifies and organizes nine moral-hazard determinants and discusses their potential implications for governance across industries. The synthesis may help managers and policymakers consider disclosure, incentive design, monitoring, enforcement and accountability when addressing agency problems. Future studies should test the proposed relationships using clearly defined measures and transparent empirical methods in specific settings, including Malaysia and the halal industry.

Relevance to the halal industry. The review synthesizes evidence from several industries rather than empirically testing halal firms or supply chains. Its findings therefore offer a conceptual lens for considering information transparency, aligned incentives, monitoring, enforcement and independent verification in halal-related governance. Potential agency relationships include those among producers, suppliers, logistics providers, certification bodies, regulators and consumers, where responsibilities and access to information may differ. This interpretation is consistent with Aigbogun et al. (2016), who examine halal logistics from an agency perspective. Future empirical research is needed to test whether and how the nine determinants operate in specific halal-industry settings.

Within halal governance, this framework suggests a specific research agenda. Future studies can examine whether stronger traceability and information disclosure reduce opportunities for hidden action, whether certification and independent verification strengthen monitoring, and whether third-party logistics or contractual arrangements alter accountability across supply-chain actors. Existing halal supply-chain studies emphasize integrity, coordination and logistics governance (Tieman, van der Vorst and Che Ghazali, 2012; Mohamed, Abdul Rahim and Ma'aram, 2021; Ali et al., 2022; Rajendran, Kamarulzaman and Abd Rahman, 2024), while Aigbogun et al. (2016) provides an agency-oriented basis for connecting these governance concerns with principal-agent relationships. These propositions should be tested empirically before causal claims are made about moral hazard in halal-industry settings.

Taken together, these implications complete the conceptual progression of the article from Agency Theory, through cross-industry thematic evidence, to a bounded application in the halal industry. The halal discussion therefore represents a research-oriented extension of the synthesized framework rather than evidence that the same relationships have already been established empirically in halal settings.

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REFERENCES

1. Aigbogun, O., Ghazali, Z. & Razali, R. 2016. The mediating impact of halal logistics on supply chain resilience: An agency perspective. International Review of Management and Marketing 6(S4): 209–216.
2. Akin, O., Maryn, J.M. & Peydro, J.L. 2020. Anticipating the financial crisis: Evidence from insider trading in banks. Economic Policy 35(102): 215–267.
3. Ali, M.H., Iranmanesh, M., Tan, K.H., Zailani, S. & Omar, N.A. 2022. Impact of supply chain integration on halal food supply chain integrity and food quality performance. Journal of Islamic Marketing 13(7): 1515–1534.
4. Arifin, Z. 2003. Efektifitas mekanisme bonding dividen dan hutang perusahaan. Jurnal Siasat Bisnis 1(8): 19–31.
5. Arifn, A., Sugiyanto, F. & Widodo, W. 2018. Measuring moral hazard behaviour and its determinants within credit installment. Economics Development Analysis Journal 7(4).
6. Balomenou, C., Maliari, M., Semasis, S., Mamalis, S. & Pavlidis, S. 2019. Rural subsidizes and revealing moral hazards. International Journal of Business and Economic Sciences Applied Research 12(3).
7. Bebchuk, L. & Fried, J. 2004. Pay without executive performance compensation. Harvard University Press, hlm. First Hava. Cambridge, Massachusetts and London, England.
8. Bebchuk, L. & Hirst, S. 2019. The specter of the giant tree. Boston University Law Review 99(3): 721–741.
9. Bhattacharya, S., Gupta, A. & Hasija, S. 2018. Single sourcing versus multisourcing: The roles of output verifiability on task modularity. MIS Quarterly: Management Information Systems 42(4): 1171–1186.
10. Biener, C., Eling, M., Landmann, A. & Pradhan, S. 2018. Can group incentives alleviate moral hazard? The role of pro-social preferences. European Economic Review 101: 230–249.
11. Bouheni, F. Ben. 2014. Banking regulation and supervision: Can it enhance stability in Europe? Journal of Financial Economic Policy 6(3): 244–269.
12. Boyer, C.N. & Smith, S.A. 2019. Evaluating changes to prevent planting provision on moral hazard. Journal of Agricultural and Applied Economics 51(2): 315–327.
13. Bu, J. & Cuervo-Cazurra, A. 2020. Informality costs: Informal entrepreneurship and innovation in emerging economies. Strategic Entrepreneurship Journal 14(3): 329–368.
14. Chang, X., Fong, P.S.W., Chen, Q. & Liu, Y. 2020. Coordination contracts in the university technology transfer chain. Knowledge Management Research and Practice 18(2): 234–247.
15. Chen, T. 2021. Can health savings accounts reduce health spending? Evidence from China. Frontiers of Economics in China 16(1): 105–123.
16. Chen, Y.H. & Jiang, B. 2019. Effects of monitoring technology on the insurance market. Production and Operations Management 28(8): 1957–1971.
17. Cutler, D. & Zeckhauser, R. 1999. The anatomy of health insurance. National Bureau of Economic Research 1.
18. Darrough, M., Kim, H. & Zur, E. 2019. The impact of corporate welfare policy on firm-level productivity: Evidence from unemployment insurance. Journal of Business Ethics 159(3): 795–815.
19. Dendramis, Y., Tzavalis, E. & Adraktas, G. 2018. Credit risk modelling under recessionary and financially distressed conditions. Journal of Banking and Finance 91: 160–175.
20. Doepke, M. & Townsend, R.M. 2006. Dynamic mechanism design with hidden income and hidden actions. Journal of Economic Theory 126(1): 235–285.
21. Du, Y., Zhou, H., Yuan, Y. & Xue, H. 2019. Exploring the moral hazard evolutionary mechanism for BIM implementation in an integrated project team. Sustainability (Switzerland) 11(20).
22. Dusansky, R. & Koc, C. 2016. Individual welfare when consumers can shop for health insurance. Economic Inquiry 54(2): 1283–1290.
23. Economic Journal 2(1): 19–27.
24. Eisenhardt, M. 1989. Agency theory: An assessment and review. Academy Of Management 14(1): 57–74.
25. Eufinger, C. & Gill, A. 2017. Incentive-based capital requirements. Management Science 63(12): 4101–4113.
26. Evidence based on new measures of finance. International Journal of Economics and Management

Journal homepage 11(1): 17–29.
27. Feldstein, M. & Friedman, B. 1977. Tax subsidies, the rational demand for insurance and the health care crisis. Journal of Public Economics 7(2): 155–178.
28. Fernandes, A. & Phelan, C. 2000. A recursive formulation for repeated agency with history dependence. Journal of Economic Theory 91: 223–247.
29. Finkelstein, A. 2002. The effect of tax subsidies to employer-provided supplementary health insurance: Evidence from Canada. Journal of Public Economics 84(3): 305–339.
30. Finkelstein, A., Wright, S.T.B., Bernstein, M., Gruber, J., Newhouse, J.P., Allen, H., Baicker, K. & Group, O.H.S. 2012. The oregon health insurance experiment: Evidence from the first year*. The Quarterly Journal of Economics 127(August): 1057–1106.
31. Flatnes, J.E. 2021. Information sharing and rationing in credit markets. American Journal of Agricultural Economics 103(3): 944–960.
32. Fu, R. & Noguchi, H. 2019. Moral hazard under zero price policy: evidence from Japanese long-term care claims data. European Journal of Health Economics 20(6): 785–799.
33. Gao, C., Cheng, T.C.E., Shen, H. & Xu, L. 2016. Incentives for quality improvement efforts coordination in supply chains with partial cost allocation contract. International Journal of Production Research 54(20): 6216–6231.
34. Gelade, W. & Guirkinger, C. 2018. The enforcement advantage of external monitoring: Lessons from an experiment with joint-liability groups in Burkina Faso. Journal of Economic Behavior and Organization 151: 307–325.
35. Goda, G.S. 2011. The impact of state tax subsidies for private long-term care insurance on coverage and medicaid expenditures. Journal of Public Economics 95(7–8): 744–757.
36. Gonzalez-Ricoy, I. 2020. Ownership and control rights in democratic firms–a republican approach. Review of Social Economy 78(3): 411–430.
37. Gonzalo, J.F., San-Jose, L. & Retolaza, J.L. 2021. Moral compliance as facilitator for ethical reflection in management: catalysts and situations. Total Quality Management & Business Excellence 32(9–10): 1106–1121. management: catalysts and situations. Total Quality Management and Business Excellence 0(0): 1–16.
38. Grossman, S.J. & Hart, O.D. 1983. An analysis of the principal-agent problem. Econometrica 51(1).
39. Harris-Todaro developing economy: An application to India. Applied Economics 41(21): 2767–2777.
40. Heath, R. 2018. Why do firms hire using referrals? Evidence from Bangladeshi garment factories. Journal of Political Economy 126(4): 1691–1746.
41. Hirschauer, N. 2004. A model-based approach to moral hazard in food chains. Agrarwirtschaft 53(53): 192–206.
42. Holmstrom, B. & Milgrom, P. 1991. Multitask principal–agent analyses: Incentive contracts, asset ownership and job design. The Journal of Law, Economics and Organization 7(special_issue): 24–52.
43. Hopenhayn, H. & Jarque, A. 2010. Unobservable persistent productivity and long-term contracts. Review of Economic Dynamics 13(2): 333–349.
44. Hoppe, E.I. & Schmitz, P.W. 2018. Hidden action and outcome contractibility: An experimental test of moral hazard theory. Games and Economic Behavior 109: 544–564.
45. Horowitz, J.K. & Lichtenberg, E. 1993. Chemical use in agriculture. American Journal of Agricultural Economics 75(November): 926–935.
46. Hsieh, M.F. & Lee, C.C. 2020. Bank liquidity creation, regulations and credit risk. Asia-Pacific Journal of Financial Studies 49(3): 368–409.
47. Huang, W., Li, J. & Zhang, Q. 2019. Information asymmetry, legal environment and family firm governance: Evidence from IPO underpricing in China. Pacific Basin Finance Journal 57(October 2017): 101109.
48. Humphries, D. & Wallace, D. 1980. Capitalist accumulation and urban crime 1950-1971. Social Problems 28(2): 179–193.
49. Irwin, T.C. 2016. Getting the dog to bark: Disclosing fiscal risks from the financial sector. Journal of International Commerce, Economics and Policy 7(2): 1–17.
50. Islam, M.S. & Nishiyama, S.I. 2019. Non-performing loans of commercial banks in south asian countries: Adverse selection and moral hazard issues. Asian Economic and Financial Review 9(9): 1091–1106.

51. Jarque, A. 2010. Repeated moral hazard with effort persistence. Journal of Economic Theory 145(6): 2412–2423.
52. Jarungrattanapong, R. 2020. Joint-liability and dynamic incentive mechanisms in microlenCing: Evidence from lab-in-the-field experiments in Thailand. Kasetsart Journal of Social Sciences 41(2): 407–414.
53. Jaspersen, J.G. & Richter, A. 2015. The wealth effects of premium subsidies on moral hazard in insurance markets. European Economic Review 77: 139–153.
54. Jensen, M. & Meckling, W. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. The Economic Nature of the Firm: A Reader, Third Edition: 283–303.
55. Kapounek, S. 2017. The impact of institutional quality on bank lending activity: Evidence from bayesian model averaging. Finance a Uver - Czech Journal of Economics and Finance 67(5): 372–395.
56. Kefeli, Z. & Jones, G. 2012. Moral hazard and the impact of private health insurance on the utilisation of health care in Malaysia. Jurnal Ekonomi Malaysia 46(2): 159–175.
57. Kreier, R. 2019. Moral Hazard: It's the supply side, stupid! World Affairs 182(2): 205–223.
58. Krugman, P.R., Obstfeld, M. & Melitz, M.J. 2012. International economics theory & policy. Y. Sally, B. Donna, K. S. Noel, M. Karen & P. Melissa (Pnyt.) hlm. Ninth Edition. Addison-Wesley: Boston.
59. Kwon, I. 2006. Incentives, wages and promotions: Theory and evidence. RAND Journal of Economics 37(6): 100–120.
60. Laffont, J.-J. & Martimort, D. 2001. The theory of incentives I: the principalagent model. Princeton University Press.
61. Le, S., Sanglestsawai, S., Bunyasiri, I.N. & Suchato, R. 2020. Evidence of moral hazards in crop insurance in Northeast China. Southeast Asian Journal of Economics (January-June): 1–19.
62. Liu, K. & Song, H. 2017. Contract and incentive mechanism in low-carbon R&D cooperation. Supply Chain Management 22(3): 270–283.
63. Marinovic, I. & Povel, P. 2017. Competition for talent under performance manipulation. Journal of Accounting and Economics 64(1): 1–14.
64. Melumad, N., Mookherjee, D. & Reichelstein, S. 1992. A theory of responsibility centers. Journal of Accounting and Economics 15(4): 445–484.
65. Mohamed, Y.H., Abdul Rahim, A.R. & Ma'aram, A. 2021. The effect of halal supply chain management on halal integrity assurance for the food industry in Malaysia. Journal of Islamic Marketing 12(9): 1734–1750.
66. Mohd Ali, N., Syed Salim, S.M., Mansur, M. & Shahiri, H.I. 2024. Moral hazard behaviors and mitigation strategies: A systematic literature review. Jurnal Ekonomi Malaysia.
67. Mukoyama, T. & Aysegul, S. 2004. Repeated moral hazard with persistence. The Center for Interuniversity Research in Quantitative Economics (CIREQ), hlm. CIREQ.
68. Mumtaz, R., Jadoon, I.A. & Sohail, N. 2019. Explicit deposit insurance and bank risk-taking: Does banking supervision matter? Pakistan Journal of Commerce and Social Science 13(3): 727–748.
69. Naim, A.M., Long, M.N.H.H., Bakar, M.A. & Hussain, M.N.M. 2016. Shariah appraisal on the issue of imposing burden of proof to the entrepreneur in trust-based contracts.
70. Panicker, P.G. & Amudha, R. 2020. Mediating effect of employee effort in employee informativeness and performance. International Journal of Management 11(4): 366–369.
71. Pereira da Silva, L.A. & Yoshitomi, M. 2001. Can "moral hazard" explain the Asian crises? ADB Institute Research Paper 29.
72. Presley, J.R. & Sessions, J.G. 1994. Islamic economics: The emergence of a new paradigm. Economic Journal 104(424): 584–596.
73. Quiggin, J.C., Karagiannis, G. & Stanton, J. 1993. Crop insurance and crop production: An empirical study of moral hazard and adverse selection. Australian Journal of Agricultural Economics 37(2): 95–113.
74. Rajendran, S.D., Kamarulzaman, N.H. & Abd Rahman, A. 2024. The mediating role of halal supply chain integrity in enhancing performance for halal herbal-based food SMEs. Journal of Islamic Marketing 15(12): 3621–3648.
75. Rogerson, W.P. 1985. Repeated moral hazard. Journal of the Econometric Society 53(1): 69–76.
76. Ross, S.A. 1977. Determination of financial structure: The incentive-signalling approach. Bell J Econ

8(1): 23–40.
77. Sabbaghi, M.A. 2017. Moral hazard in the use of agricultural credits by Iranian farmers: A case study Dezful township. Scientific Papers Series: Management 17(4): 29–34.
78. Salanie, B. 2005. The economics of contracts. The Economics of Contracts, hlm. Second Edition. The MIT Press: Cambridge, Massachusetts, London England.
79. Shahzad, F., Rehman, I.U., Hanif, W., Asim, G.A. & Baig, M.H. 2019. The influence of financial reporting quality and audit quality on investment efficiency: Evidence from Pakistan. International Journal of Accounting and Information Management 27(4): 600–614.
80. Shavell, S. 1979. Risk sharing and incentives in the principal and agent relationship. The Bell Journal of Economics 10(1): 55.
81. Shen, J.H., Zhang, J., Lee, C.C. & Li, W. 2020. Toward an internal governance structure of China's large SOEs. Journal of Asian Economics 70: 101236.
82. Smith, M.D. & Parker, R.N. 1980. Type of homicide and variation in regional rates. Source: Social Forces, hlm.
83. Song, S., Park, S. & Lee, S. 2019. Does franchising reduce geographically diversified restaurant firms' risk? International Journal of Contemporary Hospitality Management 31(1): 161–179.
84. Starbird, S.A. 2012. Moral hazard, inspection policy and food safety 79(4): 1051–1075.
85. Steen, A., McGrath, D. & Wong, A. 2016. Market failure, regulation and education of financial advisors. Australasian Accounting, Business and Finance Journal 10(1): 3–17.
86. Stiglitz, J.E. 2008. Principal and agent. The New Palgrave Dictionary of Economics: 637–644.
87. Tay, R. & Choi, J. 2016. Factors associated with crashes involving taxi owners and non-owners: A case of moral hazard and adverse selection? Accident Analysis and Prevention 87: 78–82.
88. Thonnes, S. 2019. Ex-post moral hazard in the health insurance market: empirical evidence from German data. European Journal of Health Economics 20(9): 1317–1333.
89. Tieman, M., van der Vorst, J.G.A.J. & Che Ghazali, M. 2012. Principles in halal supply chain management. Journal of Islamic Marketing 3(3): 217–243.
90. Vincent, H.S. & Barry, K.G. 2017. Crop insurance, moral hazards and agricultural chemical use. The Economics of Agri-Environmental Policy 2(May): 169–179.
91. Wang, S., Chen, K., Liu, Z., Guo, R.Y. & Chen, S. 2019. An ontology-based approach for supply-chain quality control: From a principal–agent perspective. Journal of Information Science 45(3): 283–303.
92. Wang, Y., Cui, P. & Liu, J. 2018. Analysis of the risk-sharing ratio in PPP projects based on government minimum revenue guarantees. International Journal of Project Management 36(6): 899–909.
93. Wang, Y.L., Lee, C.H. & Ko, P.S. 2020. Do loan guarantees alleviate credit rationing and improve economic welfare? Sustainability (Switzerland) 12(9): 1–16.
94. Ward, D.G. & Gabel, M. 2019. Judicial review timing and legislative posturing: Reconsidering the moral hazard problem. Journal of Politics 81(2): 681–685.
95. Wu, H.C. & Wu, Y.T. 2016. Evaluating credit rating prediction by using the KMV model and random forest. Kybernetes 45(10): 1637–1651.
96. Xu, L.L., Zhao, H., Petruzzi, N.C., Xu, L.L., Zhao, H. & Petruzzi, C. 2020. Inducing compliance with postmarket studies for drugs under FDA's accelerated approval pathway (December): 0–21.
97. Yoshino, N. & Taghizadeh-Hesary, F. 2019. Optimal credit guarantee ratio for small and medium-sized enterprises' financing: Evidence from Asia. Economic Analysis and Policy 62: 342–356.
98. Yu, N.N. & Zhu, X. 2018. Affordable care encourages healthy living: Theory and evidence from China's new cooperative medical scheme. Health Economics (United Kingdom) 27(12): 2051–2066.
99. Zhang, D., Cai, J., Dickinson, D.G. & Kutan, A.M. 2016. Non-performing loans, moral hazard and regulation of the Chinese commercial banking system. Journal of Banking and Finance 63: 48–60.
100. Zhang, L. & Li, X. 2016. The impact of traditional culture on farmers' moral hazard behavior in crop production: Evidence from China. Sustainability (Switzerland) 8(7): 1–15.
101. Zhang, Y. & Shi, B. 2017. Systematic risk and deposit insurance pricing: Based on market model and option pricing theory. China Finance Review International 7(4): 390–406.