

## The Evolution of Islamic Management Research on Innovation

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**Abstract:** The fundamentalists often perceive that Islam and its principles are a hindrance to innovation. Relevant, extensive research proved otherwise. For example, a comparison of research on innovation in the Islamic and non-Islamic perspective was made, which verified that Islam does promote innovation. As this is a content analysis paper, it is important to acknowledge that there are five types of innovation in Islamic banking. They are Islamic financial product innovation, Islamic bank process innovation, Islamic bank marketing innovation, innovation and risk management in Islamic finance, and Islamic work value and innovation. After comparing with research on innovation in the non-Islamic perspective, it was found that there is still a lack of protection for the innovation and the Islamic perspective also lack measures for the innovation.

**Keywords:** Islamic Banking, Innovation, Process Innovation, Product Innovation, Marketing Innovation.

### INTRODUCTION

The economic growth of a nation is highly dependent on innovation [1]. In the context of the firm, innovation is at the core, particularly in a highly competitive market [2]. Therefore, a majority of countries invest a lot in installing an innovation system. On the other hand, the fundamentalists always perceive that the teachings of Islam appear to promote stagnant societies, which slows down the progress of institutional innovation.

This has been denied by Mohammed, who asserted that institutional innovations had been pursued in Islam as they facilitated dynamism in the society [3]. As such, Islam promotes a progressive society that needs to continually develop themselves to avoid from declining. The best way to achieve this is by innovating [4]. In the past two decades, as a result of globalization, firms are increasingly involved in competition in a religious business environment, especially in a Muslim country. As the people in Muslim countries are religiously-oriented, any product or service offered that has Islamic attributes will obviously appeal to them [5]. Thus, firms need to be innovative by way of complying their products or services with Islamic values. By doing so, this assures their successful competition in the Muslim countries [6]. As a result of this, Islamic management research on innovation increased drastically in the past decade. Some studies concentrated on the innovation of Islamic financial product [7, 8], Islamic ethics and innovation [9], and technological innovation [10], while others concentrated on Islamic education [11]. Yet, there is little research with respect to reporting the evolution of Islamic management research pertaining to innovation. Based on this identified gap, the objectives of this study are as follows: 1) To summarize the content of

innovation research in the non-Islamic perspective, 2) To summarize the content of innovation research in the Islamic perspective, 3) To compare innovation research in the Islamic perspective and non-Islamic perspective, 4) To recommend the direction of future research with respect to Islamic management research on innovation.

### Research on Innovation Management

There is plentiful of studies conducted on innovation management [12]. However, not many of the innovation management studies were conducted in the Islamic perspective. According to Tipu [12], innovation management research can be classified into five categories, namely process of innovation, factors affecting innovation, protection of innovation, measures of innovation, and types of innovation.

### Types of Innovation

Globalization and digitalization provide more challenges for the firm. The product innovation is even more challenging. For example, firms have to adapt their product according to globalization and digitalization. This makes product innovation difficult. Based on these arguments, Lyytinen *et al.*, [13] studied how ongoing pervasive digitization of product innovation reshaped knowledge creation and sharing in

innovation networks. The paper stated that advances in digital technologies will result in a reduction of communication costs and an increase in reach and scope via an increase in innovation network connectivity. In addition, this can further increase network knowledge heterogeneity and need for integration when the speed and scope of digital convergence increase. These changes, in turn, will result in a redistribution of control and demand for knowledge creation, assimilation and integration across time and space, eventually stretching the existing innovation networks.

Mesue [1] explained that the economic growth of a nation is dependent upon innovation. Specifically, the vehicles for innovation are firms and entrepreneurs. There are several types of product innovation. Sustaining innovation is about innovation that is expected to replace existing products with better quality ones. On the other hand, efficiency innovation is about innovation that helps a company to produce and market a product at lower cost to better satisfy their existing customers. To concentrate on non-users, a company can apply market-creating innovation to develop new products or services that are accessible to non-users.

Based on a large data set comprising 32 developed and developing countries between 1976 and 2006, Hsu, Tian and Xu [14] investigated the relationship between the development of equity markets and credit markets, and innovation. The findings revealed that firms with external financing dependency are those from high-tech intensive sectors. They exhibit higher level of innovation compared to their counterparts which rely on external financing. This shows that well developed equity markets and credit markets facilitate the high-tech intensive sector innovation.

Walker *et al.*, [15] investigated the various types of innovation and their association with organizational performance. The study revealed the various types of innovation, namely service innovation, process innovation, and administrative innovation. The study used longitudinal data extracted a sample of multi-purpose English local authorities to examine the relationship between the three types of innovation and organizational performance. The findings indicate that firms should balance their application of the three types of innovation in order to gain an improved organizational performance. By concentrating on only one type might yield negative impact on organizational performance.

### **Process Innovation**

Stiff competition forces firms to concentrate more on innovation [16-18]. Knowledge acquisition is vital in facilitating the innovation. One of the innovations that firms often concentrate upon is process innovation. The prerequisite and basis for computer-aided process innovation is efficient knowledge

accumulation [16]. This means that firms will have a better computer-aided process innovation after they have accumulated efficient knowledge. Additionally, Devlin highlighted that to make process innovation successful, firms have to take into consideration supply chain activities [17]. This is because the supply and demand side considerations provide an important input for successful process innovation to take place.

Viederyte [19] found that international logistics companies in Lithuania have benefited from organizational and process innovations. Specifically, the process innovation in logistics companies concentrate on improving the company's business via systematic implementation and usage of new management process. With that, this study revealed that there are four technological innovations that are widely used by industry players. They are: (1) data acquisition technologies, which enhance the accuracy and efficiency of good delivery, (2) Information technology-Electronic data interchange, the internet, value added network, point of sales, electronic ordering systems, etc., 3) Warehousing technologies, which monitor warehouse facilities and product movements, 4) Transportation technologies, which move product from an origin location to a prescribed destination while minimizing costs and damaged expenses. The beauty is that these technological innovations can be integrated and further shift to smart transport systems, advanced electronic contents, content development technologies and information interoperability, cloud computing solutions and services to better serve customers at the international level.

To fight commoditization, service innovation plays an important role. Lynos [2] argued that corporate culture plays a pivotal role in shaping service innovation in the investment banking sector. Additionally, due to easiness for it to be imitated, commoditization happens faster in services than in physical products. Moreover, service innovation differ from physical product innovation as it is distributed throughout the organization, continuously and broadly relevant to hiring and promotion decision, and more so they are impacted by reward systems. In other words, the behaviour of the employee in the organization becomes the main factor that affects the quality and speed of service innovation. Therefore, it is the organizational culture that shapes the behaviour of the employees in the organization. Hence, the effectiveness of service innovation very much depends on the organizational culture, as it is this culture that guides the innovative behaviour of the employee of the organization.

Meanwhile, Ellite and Reza [18] developed a model for the successful adoption of process innovation. For firms to be successful in adopting process innovation, they have to develop a new integrating mechanism for both their value added chains

and markets. By doing so, this increases the probability that their efforts to install new processing technologies will succeed. The integrating mechanism mentioned earlier, with suppliers, is aimed at enhancing productivity and capacity. Additionally, the integrating mechanism with component and material supplies will provide greater ability to capture value than the other alternative approaches. This requires the suppliers' dimension to be examined more extensively in ensuring the successful development of Buyer-Supplier integrating mechanism. On the other hand, the integrating mechanism with customers is aimed at enhancing the flexibility and reducing service requirements. Thereafter, the integrating mechanism will provide the seller-buyer with a good interaction platform to exchange information regarding matching of the product and the needs of buyer. Initially, the buyer dimension should be examined extensively as well. The introduction of this new integrating mechanism can guide and promote systematic proposals to be done and also deployment of process innovation.

Kansai [20] identified several key factors that contribute to vital role being played by technology and innovation in the retail banking distribution. These factors include state of the art technology, emerging markets, protection of customer data, socially relevant, trust in digital world and the usefulness of today's innovation for the future to come.

#### ***Antecedents of Innovation***

Bates and Khasawneh [21] examined the relationship between organizational learning culture, learning transfer climate, and perceived innovation. First of all, organizational learning is defined as developing and applying intellectual capital in ways that could make organizations become more productive. The learning and its transfer/application are principal processes in the organization innovation. This is important for the creation, sharing and application of knowledge. The results of the above study showed that organizational learning culture was able to enhance the learning transfer climates. These two important factors are able to enhance the innovative capacity of an organization.

Based on a review of the literature relating to global R&D, Jones and Davis [22] identified several types of foreign R&D facilities. Besides that, they also reviewed the link between the dimensions of national culture and innovative activities. Based on the outcome of content analysis of past literature, a framework was proposed to examine the linkage between national culture dimension and innovative activities.

Chava *et al.*, [23] explained that an empirical support for financial sector deregulation affects the young, private firm's product innovation. The results showed that the level and risk of young, private firm product innovation will decrease with intrastate banking

deregulation. Likewise, the level and risk of young, private firm product innovation will increase with interstate banking deregulation. The rationale for these is that intrastate banking deregulation will lead to an increase in the local market power of banks, while, interstate banking deregulation will lead to a decrease in the local market power of banks.

Next, Turro *et al.*, [24] also studied the relationship between culture and innovation. However, they concentrated more on the moderating effect of cultural values on firm innovation. The results showed that living in an entrepreneurial culture, media exposure and the number of procedures necessary to create a new business or access to financing, appear to be significant factors for innovation to take place.

Tey and Aida [25] conducted a similar study about culture and innovation. Their study concentrated on both the impact of organization culture and national culture on the innovativeness of international joint venture (IJV) firm via knowledge transfer. The results showed that knowledge transfer has an impact on both organizational culture and national culture, which in turn ultimately affect the international joint venture innovativeness. Additionally, by using the same data collected from Malaysia IJVs, Aida and Tey [25] examined the relationship between strategic fit, knowledge transfer; and IJV innovation. Strategic fit is defined as the congruence between/among a number of firm's objectives. These are objectives which the partners of IJVs have adhered to. The results showed that the higher the level of congruence between/among the partners' objectives, the higher the expectation that knowledge transfer will happen. This will ultimately result in higher innovation for the IJVs.

#### ***Protection of Innovation***

Lai [26] studied international intellectual property rights protection and rate of product innovation in the less developed countries. This was because the intellectual property rights protection in the less developed countries still have a room to improve, especially the enforcement. The results showed that the higher the intellectual property rights protection in the less developed countries, the higher will be level of production transfer from the developed countries. This is actually an incentive given by the less developed countries to the developed countries to transfer their production to the less developed countries, and this will lower their operations costs. As a result of higher level of production transfer to the less developed countries, new production technology and knowledge will spill over to these countries. This in turn will facilitate innovation to take in the less developed countries.

Qian [27] performed a cross-country analysis with regards to pharmaceutical patent protection (1978-2002). The primary concern of the study was whether national patent laws stimulate domestic innovation in

the context of global patenting environment. The results showed that national patent protection alone will not result in much domestic innovation. The much accelerated domestic innovation in the countries are mainly derived from higher levels of economic development, educational attainment and economic freedom.

Next, Furukawa [28] also examined the relationship between intellectual property protection and innovation. The study uncovered that there is an inverted - U relationship between intellectual property protection and innovation. This means that the innovation aspect will decrease regardless of whether the intellectual property policies are very weak or very strong. In other words, innovation will be enhanced with stronger IPR protection. Likewise, innovation will decrease in the long run when the process of “learning by doing” is suppressed.

#### ***Measures of Innovation***

Based on the data collected from large and medium firms in the UK, Wang and Ahmed [29] developed the measures for firm innovation performance. The firm innovation performance can be measured by using five dimensions, namely product innovativeness, market innovativeness, process innovativeness, behaviour innovativeness, and strategic innovativeness. Product innovativeness is about new and useful new products that are introduced to the market on time. Market innovativeness is associated with new options for adoption, entry and exploitation of the target market. Next, process innovativeness is about new ways of producing product, new management system and adopting cutting edge technology to improve the efficiency and effectiveness of the production and management processes. Additionally, behavioural innovativeness relates to innovative culture, the overall internal receptivity to new ideas, and innovation that is cultivated by employees, teams and management. Finally, strategic innovativeness is about a firm’s ability to stretch and leverage on limited resources in a creative manner so as to achieve the firm’s objectives and be able to identify a mismatch involving ambitions and available resources. Subsequently, a total of 20 items were developed to measure the five dimensions of innovativeness (at four items per dimension).

Next, Alegre *et al.*, [30] also involved themselves with measurement scale development for evaluating innovation performance. However, they focused on a different dimension. The dimension chosen was product innovation performance. The product innovation performance can be measured in terms of efficacy and efficiency. The success of an innovation is reflected by innovation efficacy. Meanwhile, innovation efficiency is about the effort that a firm adopted to achieve that degree of success. Eight items were selected to measure product

innovation efficacy, and four items were used to measure product innovation efficiency. The scale that was produced had been validated by using data collected from French biotechnology firms.

#### **Research on Innovation from the Islamic Perspective**

##### ***Financial Product Innovation***

After World War 2, the world economy experienced accelerated development due to innovation. The financial sector contributed to this great achievement, largely due to innovation [4]. Moreover, according to Fouad [31], the Islamic banking and finance industry faced close competition not only from the players of Islamic banking and finance industry, but also from the players of conventional banking and finance industry. This situation has forced the Islamic banks to continuously innovate and develop financial products and services that are in compliance with Islamic Sharia. By doing that they have fulfilled the needs and wants of the market. Many studies have been conducted concerning innovation of Islamic products and services by various researchers. However, the active adoption of these new products still remains low. Therefore, bankers have to be actively involved in promotion for the adoption of the new products [32].

Arouri *et al.*, [33] examined the interaction between conventional and Islamic financial products in terms of the dependence orientation of feedback between Islamic and conventional stock prices during crisis period. The findings indicated that (i) the impact of the current crisis was greater for conventional finance than the Islamic finance industry, (ii) the returns derived from Islamic products will be higher, (iii) the systemic risk is lower and it generates higher diversification benefits as the portfolios include Islamic products, (iv) the investment choice has changed since the US crisis.

Bergstra and Middelburg [34] discussed about the prospects of interest prohibition, such as the impact of interest prohibition on Islamic finance, and about the authority arguments for interest prohibition. The advent of electronic money has also been questioned as it makes the use of money in a more sophisticated way. The practitioners need to innovate financial products to suit the needs of the new consumption pattern. Still, the innovation must consider to bring in stability to the financial system, and attaching attributes of reliability and validity that do not interfere with the sensitivities of the people. All these need to abide, more than merely accommodating to the changing patterns representing the needs and wants of clients.

Based on the data collected from micro and small scale credit offered by public banks in Jember Regency, Dimiyati [35] examined the relationship between product innovation and debtor satisfaction. The finding indicated that product innovation has an impact



on debtors' confidence, but not debtors' loyalty. As such, banks with good product innovation can satisfy the needs and desires of their debtors better. It boosts the confidence of the debtors who use the banks' new products and/or services. Before the innovative products or services came into being, anything provided by the bank had proof of being valuable to the debtor. The only thing was that it did not provide new surprises to make them loyal to the bank.

Wison systematically investigated the different sukuk structures from a financial perspective [36]. The sukuk type involved were murabahah and ijarah-based sukuk. The murabahah sukuk offers a fixed return, while ijarah-based sukuk offers a variable return. The other more novel sukuk structures based on musharakah partnership contracts were also examined. Apart from that, sukuk pricing issues were also explored, comparing them to benchmarks such as the London Inter-bank Offer Rate. The results showed that the successful issuance and management of sukuk are very much dependent on the special purpose vehicles. The results also showed that the payment stability for sovereign debt in Saudi Arabia is greater as they make use of GDP-based pricing as the benchmark. However, this methodology is not applicable in Malaysia, yet.

#### ***Bank Process Innovation***

With the rise of Islamic banking transactions and organizations, competition in the banking industry has become obvious. Like the non-Islamic banks, Islamic banks have to respond to the changes in the environment, the speed of change, and the impact of technology on banking. To facilitate response to these changes, Rice and Mahmoud [37] proposed a framework on how to improve the process innovation for Islamic banks. The framework involves TQM, top management support, communication, reward and compensation, training and etc. those that will be impacted by process innovation.

According to Dar [38], there are two types of innovation – model innovation and process innovation. Model innovation creates new instruments and methods to produce new product/service, which ultimately generate profitability for a firm. Second is process innovation, which concentrates on the incremental process, capitalising on existing instruments and methods in new formats to make the operation of firm more effective and efficient. Islamic banking and finance, in particular, have adopted process innovation by employing Islamic legal contracts and methods in product development, to legalise its economic benefits the Islamic way.

One of the latest innovations, for services, is the internet banking. Ozdemir and Trott [39] found that the adoption rate of internet banking services in Turkey is rather low. This shows that majority of the internet users in the country have not made use of internet banking services. With the low adoption rate, they examined factors that have affected the process of internet adoption in Turkey and classified the segment as internet banking adopters and internet banking non-adopters. The results revealed that perceptual factor, experience related, socioeconomic and situational characteristics are different between internet banking service adopter and non-adopters. The perceptual factor is not only influential in terms of internet banking service usage, but also has an impact on internet banking service adoption process.

#### ***Bank Marketing Innovation***

The unique general environment in the Middle East has challenged the banking sector to select appropriate bank marketing strategies to respond to the needs and wants of the people in that region. The general environment factors include culture, lifestyle, consumer behaviour, economic development goals, legal system, and religious conditions. Dale and Salah (1988) developed a marketing innovation model; the bases for the model include the general environment factors. The model became useful for practitioners to adopt to enhance survival and growth of the banking industry in this region [40].

#### ***Bank Risk Management and Innovation***

Interestingly, various types of Islamic finance products have been introduced into the Islamic financial market in the past two decades. However, few studies have investigated the means and processes of risk mitigation in the Islamic finance market. Kahf studied the risk management arrangements and tools in Islamic finance [41]. The findings revealed that Islamic financial institutions have guidelines that provide adequate tutorial for reducing credit risk, market risks, and default and moral hazard risks.

#### ***Innovation research in HRM***

It appears that there is a substantial need to examine Islamic work ethics (IWE) and its impact on workplace outcomes in the non-Western environment. Kumar and Rose [9, 42] conducted studies on IWE and innovation capability. They uncovered that the public sector in Malaysia highly adopt the IWE. The rationale for adoption is religious demands for the establishment of justice and fair dealings in the workplace. With a high IWE, employees are expected to be more hardworking and persistent, which are the essentials for innovation. Thus, IWE has a positive impact on the innovation capability.

**Table-1: The concentrations of innovation studies from Islamic perspective**

	Authors
<b>Islamic financial product innovation</b>	Drew, 1995 [43]; Noman, 2002 [32]; Chapra, 2008 [4]; Wilson, 2008 [7]; Al-Salem, 2009 [8]; Fouad, 2009 [31]; Doraisamy <i>et al.</i> , 2011 [44]; Arouri <i>et al.</i> , [33]; Darren, 2016 [45]; Begstra and Middelburg, 2012 [34]; Dimiyati; 2011 [35]
<b>Islamic bank process innovation</b>	Rice and Mahmoud, 2001 [37]; Dar, 2003 [38]; Ozdemir and Trott [39]
<b>Islamic bank marketing innovation</b>	Dale and Salah, 1988 [40]
<b>Innovation and risk management in Islamic finance</b>	Kahf, 2006 [41]
<b>Islamic work value and innovation</b>	Kumar and Rose, 2010 [9]; Abbasi <i>et al.</i> , 2012 [46]; Awan and Akram, 2012 [47]; Kumar and Rose, 2012 [42]; Farrukh <i>et al.</i> , 2015 [48]; Mahfoudh <i>et al.</i> , 2016 [49]

Abbasi *et al.*, conducted a similar study about IWE and its innovation impact [46]. They investigated the impact of IWE on organizational learning, innovation and performance in the services industry of Pakistan. The results of the study revealed that firms that adopt the IWE have enhanced their learning, innovation and eventually organizational performance. The findings of this study promote the way forward for other Pakistani organizations to emulate, that is, incorporating Islamic work ethics into their culture for better organizational outcomes.

Quite a number of studies have started to investigate the role of IWE on Islamic firm innovation

since 2010 [47-49]. Most of the studies conform, in terms of close agreement, that there is a significant relationship between IWE and firm innovation. Table-1 summarizes the concentration of innovation studies from the Islamic perspective.

#### DISCUSSION AND CONCLUSION

In the previous sections, the studies of innovation from the Islamic perspective and non-Islamic perspective have been analysed. The innovation research in the non-Islamic perspective can be divided into five categories, namely type of innovation, process innovation, antecedents of innovation, protection of innovation, and measures of innovation.

**Table-2: Comparison of research on Innovation management between non Islamic Perspective and Islamic Perspective**

Topic	Non Islamic Perspective	Islamic Perspective
<b>Types of Innovation</b>	Lyytinen <i>et al.</i> , 2016 [50]; Mezue, 2015 [1]; Hsu, Tian and Xu, 2014 [14]; Walker <i>et al.</i> , 2007 [15]; Drew, 1995 [43]	Noman, 2002 [32]; Chapra, 2008 [4]; Wilson, 2008 [7]; Al-Salem, 2009 [8]; Doraisamy <i>et al.</i> , 2011 [44]; Darren, 2016 [45]; Dimiyati, 2011[35]
<b>Process Innovation</b>	Wang <i>et al.</i> , 2015 [51]; Viederyte, 2016 [19]; Ozdemir and Trott, 2009 [39]; Lyons, Chatman and Joyce, 2007 [2]; Devlin, 1995 [17]; Ettlle and Reza, 1992 [18]	Dar, 2003 [38]; Rice and Mahmoud, 2001 [37]; Kahf, 2006 [41];
<b>Antecedents of Innovation</b>	Bates and Khasawneh, 2005 [21]; Jones and Davis, 2000 [22]; Turro <i>et al.</i> , 2014 [52]; Aida and Tey, 2011 [25]; Tey and Aida, 2012 [53]; Chava <i>et al.</i> , 2013 [23];	Kansal, 2016 [54]; Kumar and Rose, 2012 [42]; Kumar and Rose, 2010 [9]; Abbasi <i>et al.</i> , 2012 [46]; Awan and Akram, 2012 [47]; Farrukh <i>et al.</i> , 2015 [48]; Mahfoudh <i>et al.</i> , 2016 [49]; Bergstra and Middelburg, 2012 [34];
<b>Protection of Innovation</b>	Furukawa, Y., 2010 [28]; Qian, 2007 [27]; Lai, 1998 [55]	Nil
<b>Measures of Innovation</b>	Wang and Ahmed, 2004 [29]; Alegre, 2006 [30]	Nil.

Table-2 compares the research work completed on innovation management against two contexts, namely the non-Islamic perspective and Islamic perspective. For future undertaking, the researcher might consider to explore innovation research, in the area of protection and measures of innovation in the Islamic perspective.

As a conclusion, innovation research in the Islamic perspective mostly cover the types of

innovation, such as process innovation and antecedents of innovation, but still lacking studies covering protection of innovation and measures of innovation. A majority of the innovation research in the Islamic perspective concentrates on the Islamic banking context, particularly, product innovation in Islamic financial institutions. However, only few studies have concentrated on the other contexts, and the concentration of the innovation studies are mostly about the impact of IWE on firm innovation. The researcher

might consider to explore the different concentrations of innovation to other contexts or industries. Moreover, there is still a big room for researchers to explore the innovation research in the Islamic perspective. This will definitely fill the knowledge gap in the literature about innovation and more so about Islamic management research.

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