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## Knowledge management lifecycle in Islamic bank: the case of *syariah* banks in Indonesia

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**Abstract:** Conventional banks have successfully implemented knowledge management strategy using various models to support their business performance. Meanwhile, limited study has been proposed regarding how Islamic banks manage different knowledge to support their business process. By using knowledge management lifecycle theory, we studied knowledge management process within two cases Islamic banks in Indonesia. We collected data through observation, written material, and in-depth interviews with key informants from both banks. The findings show that knowledge management lifecycle within Islamic banks did not necessarily follow the theoretical model built by previous studies conducted in conventional banking organisations because Islamic banks have unique characteristics. Islamic banks have to integrate the knowledge into Islamic values and norms before it is stored, shared, used, and improved as showed in the theoretical model. This study sheds light and provides new insight on knowledge management lifecycle within Islamic banks for both academic and practitioners.

**Keywords:** knowledge; knowledge management; knowledge lifecycle; Islamic bank; bank syariah; Islamic knowledge; Islamic values and norms; Indonesia.

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## 1 Introduction

Knowledge management is considered as an importance strategy for organisations survival in a high completion era. Organisations allocate maximum resources to manage their knowledge diversity to improve their organisation performance within a business environment. The knowledge-based economies are placed as an importance management strategy of knowledge which is considered as a vital element in supporting the sustainable of strategic competitive advantage (Omotayo, 2015). Individuals or workers come to an organisation with diverse knowledge and culture because they bring their previous education, experience, knowledge and expertise that then adds value to the organisation (Bogdanowicz and Bailey, 2002).

The workers create new knowledge through the reflection and experience during their life that is always located in individuals or group or embedded in their daily routines (David and Fahey, 2000). This various knowledge needs to be managed to support a company business process effectively. Poor knowledge management can cause failure in business process of a company. Previous studies have found that nearly 60% of failed banks had employees and board members who either lacked banking knowledge management [Greuning and Iqbal, (2008), p.36]. The findings prove the importance of better knowledge management within a company.

Indonesia Islamic banking organisations grow is more stable compared to conventional banking (Garcia et al., 2004; Setyobudi et al., 2015). Islamic banking annual growth is 20%, which includes branches growth, costumers' account and workers with various knowledge and skills (Setyobudi et al., 2015). However, overall Islamic banking market share is still low, which is 5.5% according to Martowardojo Governor Bank of Indonesia (TribunNews, 2015).

Challenge to increase syariah banking performance is relied on the employees who possess various knowledge backgrounds. Bank syariah employees were recruited from Islamic and conventional education institutions with various knowledge backgrounds. The variety of knowledge might become a competitive advantage for syariah banking industry, but also become a challenge due to differences in thinking culture, norms, belief and values (UKEssays, 2015). A study conducted by Khan (2015) found that the variety of knowledge in syariah banks has created a new problem for their business because some employees whose knowledge is not Islamic economic-based knowledge become incompatible with Islamic banks principle and business process.

This phenomenon is exacerbated with lack training and integration for employees whose their knowledge obtained from Islamic and conventional education institutions. Employees who graduated from Islamic education institutions are weak in professional and modern banking knowledge such as accountancy and marketing, while employees who graduated from conventional education institutions lack understanding of Islamic *sharia* or Islamic related rules and norms. Those problems caused low innovation and customer's satisfaction toward syariah banking businesses (Jones, 2003). A study conducted by Mehtab et al. (2015) found that more than 50% of syariah bank costumers also do not understand the principle and business process of Islamic banks

In fact, innovation is a key success of Islamic banks. The success of the innovation relies on the availability of various knowledge and their knowledge management systems (Bakar and Hashim, 2011). Even though, previous studies (e.g., Jelenic, 2011; Omotayo, 2015; Rašula et al., 2012) have found the importance of knowledge management to improve organisations performance, very limited studies pay attention to this issue in particular within Islamic banks context. There are some scholars (e.g., Bakar and Hashim, 2011; Cader et al., 2013) who studied knowledge management in Islamic banks, but their studies merely focused on comparison of knowledge management between Islamic and conventional banks and focusing on building of information systems for knowledge management in Islamic banks.

Meanwhile, limited studies focus on building a knowledge management lifecycle model in Islamic banking industries in particular how knowledge should be managed at various stages of the lifecycle. Through the use of knowledge management lifecycle theory, this study is intended to provide in-depth insight toward knowledge management lifecycle in Islamic banks in Indonesia. The aim is to shed light on better strategy of knowledge management within Islamic banks in order to support their business performances. In addressing the problem, the authors will answer the following research questions:

“How is knowledge management lifecycle in Islamic bank? And how the knowledge is managed across the lifecycle stages?”

The structure of this paper is as follows: following introduction section, literature review is discussed in Section 2. Section 3 presents methodology used in this study, while Section 4 presents the result and discussion. Conclusion and future research are discussed in Section 5 and Section 6, respectively.

## **2 Literature review**

This section discusses literature review. The literature review includes related studies, knowledge management lifecycle theory, Islamic banks business principles and human resources in Islamic banks. The literature review section is to provide theoretical lens for data gathering and analyses.

### *2.1 Related studies*

Scholars have carried out a number of researches on knowledge management within government and private organisation contexts. The organisations are included

manufacture companies (Sanchez and Mahoney, 1996; Teece, 2000), insurance (Alhawari and Al-Jarrah, 2011; Japang and Ahsan, 2012), transportation (Hiremath et al., 2012; Raymundo et al., 2014) and banking companies (Bourini et al., 2013; Chaudhary, 2012; Curado, 2008). All those studies mainly focused on conventional business organisation with characteristics are different with Islamic business organisations.

Sanchez and Mahoney (1996) focused on how knowledge management in a manufacture company influence the products development. In their study which involved workers in product development division, they found that a good knowledge management strategy can improve the products quality. With the knowledge management, the workers obtained and accessed innovative knowledge from other workers through the knowledge repository within the company.

Meanwhile, Huang et al. (2011) studied knowledge management in an insurance company. Through in-depth interviews which involved ten higher level employees, they found that the use of technology in knowledge management improved their work performance. The higher level employees were able to generate creative and innovative ideas to produce new insurance products and new marketing strategies. They accessed knowledge storage in the company database using information technology (IT) instruments.

Studies on knowledge management in Islamic banks organisation contexts mostly focus on certain stages of knowledge management lifecycle or on building a certain system for knowledge storage. The studies were conducted in Islamic banks in Pakistan (e.g., Abuazoum et al., 2013), United Arab Emirates (e.g., Cader et al., 2013) and Nigeria (e.g., Bello and Abubakar, 2014). Abuazoum et al. (2013), for example, only focus on knowledge sharing within an Islamic bank. Their study found that success knowledge sharing is determined by workers motivation.

## 2.2 *Knowledge management*

It is difficult to define what knowledge is. Scholars define knowledge in different ways according to their perspectives based on studies within particular context. A seminal definition of knowledge was proposed by Davenport and Prusak (1997, p.4) who say:

“Knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knower. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.”

Meanwhile, Davis (1999, p.200) defines knowledge as “information organized and processed to convey understanding, experience, accumulated learning, and expertise as they apply to a problem or activity.” Furthermore, Gamble and Blackwell (2001, p.11) divide knowledge into two types; “represented (explicit) and embodied (tacit) knowledge.” Explicit knowledge is objective and rational knowledge that can be expressed in words, sentences, numbers or formulas (context-free), while tacit knowledge is subjective and experiential knowledge that cannot be expressed in words, sentences, numbers, or formulas (context-specific) [Nonaka, (2006), p.7]. Within broader context, knowledge is also understood as beliefs, commitments, action and meaning which show clear distinction with information (Takeuchi and Nonaka, 2002).

Tacit knowledge is hard to define because “it consists of mental models, beliefs, and perspectives” [Nonaka and Takeuchi, (1995), p.28] and it is implicit in our patterns of action and in our head for the thing with which we are dealing (Schon, 1984). This characteristic makes tacit knowledge difficult to communicate to other individuals. The owner of tacit knowledge will, therefore, always “know more than they can say” and for this reason tacit knowledge can never fully be in the possession of a firm (Boisot, 1999). Even though tacit knowledge is hard to articulate and communicate, it can be shared through socialisation and externalisation.

Knowledge within organisations is managed to support the organisations’ operational and to gain competitive advantages. In other words, knowledge management become crucial to every organisation survival. Knowledge management is understood as “processing and setting up the intellectual capital that is assembled from various resources such databases, customers, and employees” [Becerra-Fernandez et al., (2004), p.76]. In the operational context, knowledge management includes a set of processes and practices concerned with studying, storing, retrieving and applying knowledge to enhance the organisational performance level (Davenport et al., 1998). Organisation performance relationship with employees’ competencies has been addressed by previous scholars (e.g., Bashaer et al., 2016; Kumar et al., 2017). They argue that employees’ cognitive, emotional and social competencies strongly influence organisation performance.

Knowledge within organisation, not only come from one sources, but it requires diversification to increase competitiveness. The diversification is carried out through improving organisational learning among employees (Al-Khasawneh, 2014). Those various knowledge can be in various types such as employees’ ideas, text, graphics and research reports which are stored in a standard companies repository and they are updated continuously (Zack, 1999).

### 2.3 Knowledge management lifecycle theory

A number of knowledge management lifecycle model have been proposed (e.g., Birkinshaw and Sheehan, 2002; Evans et al., 2014; Hosseingholizadeh, 2014). Each of the models depicts a number of knowledge management stages within an organisation. The combination of the stages becomes a lifecycle of the knowledge management. Rebitzer et al. (2004, p.2) describe this ‘lifecycle’ as it includes loops between the several life phases and they give examples of such loops as the reuse and recycling of post consumer products (originating in the end-of-life phase) or recycling of production scrap. This means when products reach end of life phase, they can be recycled to produce new products. This sense of lifecycle model is better explained in knowledge management models from Evans et al. (2014) and Hosseingholizadeh (2014).

Evans et al. (2014) propose a six stage (identify, create, store, share, use, lean and improve) of knowledge management lifecycle within organisations. Evans et al. (2014) argue that organisations gather knowledge from external and internal organisations. At the *identify* stage, knowledge management involves eliciting codified and encapsulated knowledge assets (e.g., documents in electronic and print format stored in a knowledge repository and/or live demonstrations and observations of artefacts). At the *identify* stage subsequently, involves analysing and assessing the assets based on specific organisational rules, cultures and evaluation criteria. If none of the knowledge are found through searching during the *identify* stage, a knowledge request may trigger the need for new

knowledge assets to be created. Knowledge might be created through interaction between company employees and their clients, for example, between sales force and costumers (Acharya et al., 2018).

Evans et al. (2014) add that the knowledge is stored as an active component of the organisational memory. The emergence of IT, support organisations to codify, digitalises and secure knowledge in a storage system (Al-Ahbabi et al., 2017). After it is stored, the knowledge assets are retrieved from the organisational memory, to be shared (disseminated/communicated) both internally and externally. Their value can be extracted and applied throughout the organisation, to solve problems, make decisions, improve efficiency or promote innovative thinking, the employees learn to improve existing knowledge. Finally, the learning that takes place in the previous phase leads to further refinement of the knowledge assets.

Meanwhile, Hosseingholizadeh (2014) built a knowledge management lifecycle model from extraction of 32 previous seminal publications. The model consists of nine stages of knowledge management in which it begun from goal setting, identification, acquisition, evaluation, organisation, preservation, sharing, application and finally, an organisation evaluate the effectiveness of the knowledge management. In the effectiveness evaluation stage, an organisation get a feedback from the goal setting and the knowledge management process may return the first stage again.

In addition, Birkinshaw and Sheehan (2002) proposed four stages of knowledge management theory. According to Birkkinshaw and Sheehan (2002) knowledge management is begun when organisation create knowledge through various activities. At creation stage, the idea is likely to be rather abstract and not even well understood by the individual who thought of it, but there is enough coherence that this individual can start to test it out – in a laboratory setting in the case of the scientist, or in conversation with a client in the case of the management consultant. During this stage, many ideas will turn out to be dead-ends or they will fail to generate interest, but those that survive will become more clearly formed and better understood by their creators.

At mobilisation stage, the idea becomes more concrete and its broader value is established through a process of testing and validation. At this stage, the key individuals are in a position to codify – to some extent – the tacit knowledge they have developed. Then, in the diffusion stage, the knowledge in question starts to become fairly widely understood in the relevant marketplace. Scientific breakthroughs are reverse-engineered or successfully imitated by other firms. New management tools are widely copied and often adapted, by other consultancies. At this stage essentially, anyone who wants to get hold of the knowledge in question can do so. Finally, in the commoditisation stage, knowledge turns into common-knowledge, or in economic language, a public good. In principle such knowledge is free – it is available in a book or on the internet or it is taught in school (Birkinshaw and Sheehan, 2002).

#### *2.4 Humans resources in Islamic bank*

Human resources are a critical factor of Islamic bank success. The human resource comes from different sources of education institutions in Indonesia such as from Islamic and conventional education institutions. Employees who are recruited from Islamic education institution are considered have strong knowledge in Islamic economic perspectives, while employees who graduated from conventional education institution have strong

knowledge in conventional economic and business. However, most of Islamic bank employees have been found weak in knowledge related to Islamic bank business principles and operational (Nienhaus, 2012). This finding consistence with Budhwar et al. (2018) who argue that human resources in Muslim countries, such as Oman, are largely traditional and they are not well aligned with business strategy. Even though they adhere to Islamic principles, but they are below western human resource standard.

Impact of this weak employees knowledge is the weaken of Islamic bank competitive ability compared to conventional banks. The situation is deteriorated when lack of employees training policy to speed up Islamic banks business process (Khan, 2015). In this situation, an Islamic bank is required to implement continual training and other capacity building programs to support Islamic bank business sustainability (Antonio et al., 2012). For example, Malaysia Islamic banks recruited fresh Islamic university graduates and then they are equipped and trained with Islamic bank knowledge in a specific institution which called Islamic Banking and Finance Institute Malaysia (IBFIM). After the candidates of employees have sufficient knowledge, they are allowed to enter work force in Islamic bank industries.

### **3 Methodology**

Since the focus of this study is on knowledge management lifecycle model within two organisations, case study research is a better choice. The case studies are Bank Mandiri Syariah and Bank BNI Syariah. The case study is appropriate for exploratory analysis when investigating contemporary phenomenon within its real-life context and when the boundaries between the phenomena and the contexts are not clear (Yin, 2003, 2011). In addition, the case study also has strengths in term of the ability to deal with many types of evidence such as documents, artefacts, interviews and observations [Yin, (2003), p.8]. These evidences provide a wide range of information to the case being researched.

Then, as suggested by Yin (2003), a case study protocol was developed before the authors visited the sites. The case study protocol was an instrument and guideline for conducting the research within two Islamic banks. Data was collected through multiple strategies from the cases such as: written material, archival records, physical artefact, websites, observation and interviews (Cresswell, 1998; Miles and Huberman, 1994; Walsham, 2006; Yin, 2003). However, most data was obtained from in-depth interviews using the case study protocol because it was targeted and focused directly on the case study topic and provides perceived causal inferences [Yin, (2003), p.80]. In-depth interviews involved five informants from Bank Mandiri Syariah and five informants from Bank BNI Syariah. The interviews were between 30 to 45 minutes each and they were tape recorded to preserve sense and meaning. Each informant was numbered with a code such as informant A, B, C, D and E which then followed by their bank initial which are BSM for Bank Mandiri Syariah and BNI-S for Bank BNI Syariah.

Documents were included annual reports, memoranda, agendas, announcements and administrative documents from two syariah banks. From those documents, the data was collected such as Islamic banks history, its products, business strategies, knowledge management strategies, the bank's policy and operation. The informants were recruited from different level of the banks hierarchy which included the manager, human

resource manager, marketing manager, market risk and operational manager, IT manager and staff who graduated from Islamic education and conventional education institutions.

All data analyses broadly followed the grounded theory data analysis method outlined by Strauss and Corbin (1998) in that the data analysis was carried out through iterations; open coding, axial coding and selective coding. We also took into consideration Urquhart et al. (2010) data conceptualisation strategy in gaining in-depth insight and understanding. The conceptualisation process started from a simple process (description) where the researcher begins initial understanding of the concepts at the level of categories and properties through open coding. Conceptual saturation was reached when no new categories were generated from the open codes and the gap in emerging concepts was filled (Kendall, 1999).

## **4 Results and discussions**

This section presents the result of the study and discussion. The result and discussion are presented in one section together to ease understanding of phenomenon in Islamic bank base on the finding and implication. This strategy also helps readers understand the connection between results and theoretical constructs easily as they are closely related.

### *4.1 Cases study descriptions*

Indonesia Banking Act Number 7 Year 1992 which was amended become the Act Number 10 Year 2008 concerning banking system defines “bank as a business unit which collect fund from citizens in form of savings and then it is distributed to citizens in form of credits or any other schemes to increase community well being.” Islamic banks also play these roles to support the country economy and Muslim needs in particular.

The development of Islamic banking in Indonesia was formally initiated in 1992. Bank Muamalat was the first Islamic bank opened on 1st of May 2002 with capital about 106 billion rupiah. At that time, the existence of Islamic banks was not considered seriously by the Indonesian banking system because law infrastructure did not fully support Islamic banks. One government rule that supported the operation of Islamic banks was Banking Act No. 7 Year 1992 which included a provision to develop interest-free banks. This act was elucidated in the Government Decree No. 72 Year 1992 concerning bank applying share base principles.

Through introducing the Act No. 7, Indonesia recognises the duality of banking systems, that is a system where the conventional banking system exists side by side with Islamic banking system growing together to serve the Indonesian economy. However, this act only categorised Islamic banks as a bank with a profit sharing system. A few year later, the Indonesian Government introduced the Act No. 70 Year 1998 on amendment of the Act No. 7 Year 1992 concerning banking came into force to give stronger legal foundation for the existence of the Islamic banking system. The introducing of the Act No. 70 Year 1998 made the duality of banking systems; conventional banking and Islamic banking, more clear.

Since 1998, Islamic banks have grown significantly and include conventional banks that open Islamic bank divisions such as Bank Mandiri, Bank BNI and Bank BRI, and even international bank such as HSBC. Those conventional banks compete with Islamic banks to capture the market as Indonesia is the largest Muslim country in the world.



In the following year, many Islamic bank players have come into Indonesia's Islamic banking industry. By February 2003, the Islamic banking industry was represented by two full Islamic banks, eight conventional bank which opened Islamic banking divisions and 85 Islamic local banks. However, data from Financial Service Authority (OJK) in 2015 shows that there are about 2,881 Islamic bank offices currently as shown in Table 1.

**Table 1** Islamic banks in Indonesia

Indicators	Year				
	2011	2012	2013	2014	2015
Conventional bank syariah					
Number of bank	11	11	11	12	
Number of offices	1.401	1.745	1.998	2.151	12
Syariah business unit					
Conventional bank with syariah bussiness unit	24	24	23	22	22
Number of offices	336	517	590	320	327
Community syariah financing					
Number of banks	155	158	163	163	161
Number of offices	364	401	402	439	433
Total number of offices	2.101	2.663	2.990	2.910	2881

Source: Indonesia Financial Services Authority (OJK) (2015, p.2)

Data from Indonesia Financial Services Authority (2015) also shows that Indonesia's Islamic banking assets are increasing from year to year. Islamic bank assets under conventional banks increased from 205 trillion in 2014 to 2013 trillion in 2015. Meanwhile, Islamic bank business units assets increased from 77 trillion in 2014 to 82 trillion in 2015 (Indonesia Financial Services Authority, 2015). It is also projected that Islamic banks assets will increase to 5% of total banking assets next few years. This development results from the increasing demand of Muslim people to follow their religion financial rule preference.

Islamic banking institutions conform to provisions of the Islamic law in all its investment banking transactions through the application of financial intermediary concepts and loss/profit sharing, within the framework of agency both private and public (Al-Khasawneh, 2014). As such, Islamic banks run their businesses based on the characteristics such as: the abolition of interest (*riba*) from all financial transactions; the avoidance of economic activities which involve speculation (*gharar*); levying Islamic tax (*zakat* = purification) as a means of taking care of the needy in society and as a form of income distribution; the banks do not sell products and services that contradict the value pattern of Islamic (*haram*); and provide the provision of *Takaful* (Islamic insurance) [Lewis and Algaoud, (2001), p.28].

The rationale behind this principle is rather one of prudence, in the sense of taking all the necessary precautions to ensure that Islamic funds do not become mixed with other funds that may be involved with *riba*, *gharar* or *haram* activities. Therefore, in order to ensure compliance with Islamic principles, conventional banks wishing to offer Islamic products must guarantee and publicise that the funds devoted to conventional activities will not be mixed (commingled) with those destined for Islamic activities [Sole, (2007), p.5].

This study was carried out in two Islamic banks in Palu. The banks are Bank Mandiri Syariah and Bank BNI Syariah. Both banks have relatively similar in employee's number and business models. Bank Mandiri Syariah employs 43 workers in two branches in Palu, while Bank BNI Syariah has 26 employees in a single branch.

Bank BNI Syariah sells product such as saving, deposit and funding. Funding is focused on individual funding, micro industry and corporate. Meanwhile, Bank Mandiri Syariah also sells products such as saving, gyro, deposit and consumers funding. In selling the products, Bank BNI Syariah incorporates Islamic term 'syariah' in their products to show the bank compliance with Islamic law. For example, BNI Syariah has BNI Syariah multipurpose (funding), BNI Syariah Automotive (car or motorcycle credit funding) and BNI Syariah Gold Investment. Bank Syariah Mandiri also does similar strategy by using Islamic terms in their product promotion on the website. Instead, both banks operate under *syariah* law, the banks still requires collateral in any funding schemes offered to customers.

#### *4.2 Knowledge management in Islamic bank*

The findings of this study show that knowledge management process within two Islamic banks mostly resembles to the previous theory. However, there is an important finding in this study which leads to improvement of the theory. Knowledge management in Islamic banks is unique due to strongly influenced and shaped by Islamic values and teaching. In addition knowledge in Islamic banks is also highly diverse because the two education system (Islam and conventional) in Indonesia. As such, knowledge within Islamic banks is not directly passed to a storage bin after it is created, rather it is integrated through various mechanism to produce common knowledge to fit Islamic bank contexts. Each stage of knowledge management lifecycle within two case studies of Islamic banks is discussed in the following subsections.

##### *4.2.1 Knowledge identification and/or creation*

A knowledge request may trigger the need for new knowledge assets to be created, if none are found through searching during the *identify* stage. New knowledge assets may also need to be created if existing knowledge assets only partially satisfy knowledge needs (Evans et al., 2014). Knowledge identification and creation within both Islamic banks was carried out through a number strategies such as network analysis or brainstorming sessions, analysing and assessing the assets based on specific organisational rules and cultures, employees selection during recruitment process and through assessing document in electronic or print format.

Brain storming is usually practiced in the morning before they start working. Employees express their ideas to the forum. When there is a brilliant idea proposed by employees, the bank stored the idea in a print document or electronic storage such as computer. The idea will be knowledge for other employees which can be accessed in the future.

Brainstorming activity is done every morning for duration 10 to 15 minutes and on Friday morning, the activity is held longer because Friday is a holy day for Muslim. An informant from BNI Syariah asserts "we pray every morning because it is the rule of management and after the praying time we are requested to give argument related to our job or propose new idea if we have."

Source of knowledge of Islamic bank is also obtained from mass media such as newspaper, television and internet. For example, an informant from BNI Syariah stated that they often find new marketing strategies from news paper and internet. Books are important knowledge sources for the banks. Books and brochures are sent by central office to all branches as printed medium. The staffs can use the books and brochures to possess certain knowledge related to their job as remarked by an informant from Bank Mandiri Syariah. "I read books, such as manual and guidance and brochures sent by central office to acquire Islamic knowledge." Bank Syariah Mandiri stores the books, brochures and other printed document in a library. All staffs, then, can access this knowledge, anytime when they need it.

Recruitment process is a better opportunity to recruit relevant knowledge workers. The banks usually have identified relevant knowledge workers prior recruitment process. The workers are expected to bring new knowledge to the Islamic bank organisations to improve performance and competitive advantage. However, even though the banks operate under Islamic law and value, most of employees were recruited from conventional universities. For example, in bank BNI Syariah, only four employees graduated from Islamic education institutions and Bank Mandiri Syariah has only six Islamic economy-based employees.

This phenomenon support previous studies which state that Islamic banks in Indonesia only employ about 10% to 12% employees with Islamic economy background (Adibah, 2014). This fact led the banks to focus on possessing more conventional knowledge rather than Islamic economy-based knowledge. Even, Islamic banks do not use their websites to attract fresh and young candidates who have obtained degrees in fields related to Islamic banking and finance, law, marketing and accounting from recognised Islamic colleges and universities (Khan, 2015).

The situation become deteriorates when a manager of human resource state that they did not consider important to focus on recruitment employees from Islamic education institution as stated below:

"When we recruit staff we do not consider recruiting a certain group of workers. We give the same opportunity to all applicants as long as they are professional and they have a bachelor degree such as economics, agriculture, engineering, or Islamic knowledge holders from Islamic institute and college, etc."

In a mission of one Islamic bank, it is clearly stated that the bank need to recruit professional staff who understand *sharia* banking practices. However, this was not practiced by the bank human resource. Consequently, there is no policy to prioritise staff who possess knowledgeable staff in Islamic economic.

#### 4.2.2 Knowledge integration

These case studies illustrate the dynamism in which new knowledge is created by simultaneously promoting the formation of a horizontally integrated network among strategic communities between external partners including customers and a vertically integrated network among strategic communities within the corporation (Shibata and Kodama, 2007). Integration is the most important stage of knowledge management lifecycle within both Islamic banks because the sources of knowledge are different. For example, some of their employees were graduated from Islamic education institutions,

while others from conventional education institutions. In addition, knowledge which was obtained from media other than humans also has different characterisation which might not be compatible with Islamic bank norms and values. This requires the banks to integrate the knowledge to produce common knowledge which is understood by both group of employees and adjusted to the banks' organisation norms and values.

The banks integrated those two different groups of employees' knowledge to support their business processes. This integration process was done through some means such as IT, seminar, workshop and regular praying. An informant from BNI Syariah said "we have some information technologies that support the knowledge integration such as internet, intranet, and telephone." Intranet is an internal networking facility which is used not only for knowledge integration (such as circulating knowledge among employees) but also used for service provision purposes. Both banks have intranet systems that were developed by their central offices.

Knowledge integration within the two Islamic banks was also carried out through two mechanisms; routinisation and directions. Routinisation is practiced through regular morning meeting and weekly praying. For example, Bank Mandiri Syariah use Friday morning praying to integrate non-Islamic-based knowledge employees into Islamic knowledge and values. Meanwhile, Bank BNI Syariah practice Friday afternoon praying to build common knowledge among all Islamic-based and conventional knowledge employees. Praying is not only intended to build similar perspective toward particular knowledge but it is also intended to establish common Islamic values and norms among the employees. As a result, employees who graduated from conventional university are assimilated into Islamic banks values and norms.

Praying together in the morning is a unique instrument to integrate different employees into Islamic values and norms as described by a participant who says "we do routine praying in the morning before we start working. The objective of this activity is to refresh our staff morality based on Islamic values and to socialize Islamic knowledge." Regarding regular praying, BNI Syariah allocates regular budget to support this religious activity. Each week they provide between 1–2 million budgets for food and for inviting *Ulama* (a Muslim cleric). All employees are expected to increase their Islamic knowledge and build moral values based on Islamic teaching.

The banks strategy to establish Islamic culture through religious activities supports the Islamic value and norms integration within those two banks. For example, conventional knowledge employees who are not familiar with Islamic culture were socialised through those activities. Bank Mandiri Syariah established corporate culture based on Islamic value which is termed as 'SIFAT' (*siddiq, istiqomah, fathanah, amanah and tabligh*). The 'SIFAT' has been internalised and transformed through regular praying strategies. The SIFAT value is intended to improve employees' emotional intelligence in line with Islamic values. Kumar et al. (2017) argue that employee's emotional intelligence support organisational learning and adaptive performance.

Incidental gathering is another strategy to integrate various knowledge into a common perspective. In this session, employees use the opportunity to build *silaturahmi* and also exchange knowledge among them. For example, an informant said:

"I was involved in an employee's gathering on 9–10 July in the Donggala Resort. All employees came there. We did *silaturahmi* to increase our connectedness among us. We also discussed many issues such as our marketing strategy and our syariah products. It was intended to build similar perception

among us toward bank operation and business.” (Informant E from Bank BNI-S)

This type of gathering which involved a fun time and productive activities such as discussion can potentially contribute to mutual understanding of knowledge among people (Wasko and Faraj, 2005). At the same time, interaction and communication among the employees are also improved which then increase their collaboration abilities in performing daily job.

Meanwhile, tacit knowledge is also important knowledge for both Bank Mandiri Syariah and Bank BNI Syariah. Tacit knowledge was shared through organisation routines where individuals can meet and interact each other frequently as suggested by Grant (1996). Through the organisational routines individuals have chance to share tacit knowledge via interpersonal and social relationship (Zack, 1999). Routine praying and gathering can increase employees’ engagements which lead to positive competing as found by Nada and Kumar (2016). Employees within the banks competes base on Islamic values and norms.

#### 4.2.3 Knowledge storage

Once the knowledge has been deemed valuable to the organisation, based on the analysis and assessment in the *identify* and *create* phases, it is stored as an active component of the organisational memory (Evans et al., 2014). Nonaka (2008) and Hansen et al. (2002) also suggest companies to codify knowledge carefully and store it in single integrated storage or database. It is also suggested that only explicit knowledge can be stored and re-accessed in multiple times. Meanwhile, tacit knowledge is not possible to be stored in a storage or database system. Instead tacit knowledge is stored in the mind of inventors or employees (Ernst, 2003).

Both Bank Mandiri Syariah and BNI Syariah store knowledge within an internal information system. This system allows employees to access all information they required to solve a problem or improve their knowledge. Bank Mandiri Syariah, for example, stores knowledge on their corporate website. Under *Edukasi Syariah* Facility, employees can access various syariah knowledge on the website such as syariah finance, syariah wealth management, women role in family finance management, donation (*sadakah*), resignation (*tawakkal*), etc. This online knowledge repository helps employees if they need a solution for their job. An informant from Bank Syariah Mandiri stated that:

“If I do not know something relating to Islamic issues, I go there (website) to find syariah fatwas and look into the Q&As (question and answer facility on the website), which discusses latest concerns in Islamic banking.”

Bank BNI Syariah also stores their valuable knowledge in their database which can be accessed all the time if required. The bank calls this knowledge as ‘business intelligence’ because it plays crucial role in the success of the bank’s business operation. This intelligence knowledge was harnessed from employee’s experiences, mass media and research. Bank Mandiri Syariah has three information systems which are used to store their knowledge. They are: human resources information system (HRIS), learning management system (LMS) and competency-based human resources management (CBHRM). Employees can use those information systems to access knowledge such as through e-learning system (Bank-Mandiri-Syariah, 2016).

#### 4.2.4 Knowledge sharing

Knowledge assets are retrieved from the organisational memory, to be shared (disseminated/communicated), both internally and externally (Evans et al., 2014). Key success factors for knowledge sharing are organisational culture and IT facilities (Pantouvakis et al., 2013). There is a policy from the management of the banks to encourage staff to use IT for the transferring and sharing of knowledge. The use of IT for knowledge integration activities are based on the awareness of the staff themselves as said by a participant as follow:

“Management encourages staff to use IT for knowledge transfer and sharing; we let them increase their awareness of the importance of IT for the knowledge sharing process. We do not allow staff to keep important information for their own benefits. They have to share it with other employees.”

In terms of sharing knowledge, as a process of knowledge and cultural integration, both Islamic banks have established a culture of mutual teaching among employees as stated by a participant; “our company culture obliges senior staff to transfer knowledge to junior staff and vice versa.” Another informant from Bank BNI Syariah also expressed same fact as follow: “we often have interesting discussions and interactions with other staff in my work place and I often get support from the division manager.” This habit has become the banks’ organisational culture which is understood as shared beliefs, values and practices of a group or groups within the organisation [Anantatmula, (2010), p.242]. The participant comments above reflect ladders’ commitment to support knowledge sharing. This type of commitment can be a prerequisite for organisation innovation in particular relating to KM management innovation (Zaabi et al., 2017).

Information communication technologies (ICTs) infrastructures such as internet, intranet, telephone and e-mail have become a familiar source of communication instruments within both Islamic banks. Sharing knowledge among the employees were carried out through the utilising those ICTs. The use of ICTs such as discussions via teleconferencing, videoconferencing and mailing lists for knowledge sharing has been addressed in previous studies (e.g., Ali et al., 2012). IT support employees to perform their task in a better and more efficient way (Shivam et al., 2018) in particular when it is supported by top management.

Using ICT to support knowledge sharing process is not only to help the sharing and transferring of knowledge among employees inside the banks but it was also to share knowledge among staff in a branch and between branches. A participant remarked “we use ICT such as telephone to share knowledge between unit in our branch, between our branch and other branches and between our branch and central office in Jakarta.”

The establishment of *tabligh* (leadership) culture at Bank Syariah Mandiri such as mutual teaching among staff help the knowledge and cultural sharing. For example, employees who graduated from Islamic education institutions can share their knowledge with employee who graduated from conventional universities and vies versa. This increased mutual understanding among them regarding various issues in their banking business process.

Social media has become a strategic instrument to shared knowledge among employees within both banks. Both banks Facebook and Twitter account for their employees knowledge sharing. Through the social media sites, employees can engage and share knowledge to establish common knowledge among them. This strategy has been suggested by previous studies in conventional organisations such as Panahi et al.

(2012). Kingston (2012), even strongly recommend organisations to use social media sites such as websites, wikis and blogs to share knowledge among employees.

#### 4.2.5 Knowledge use

Once shared, knowledge assets can be activated (put to use) – their value can be extracted and applied throughout the organisation, to solve problems, make decisions, improve efficiency, or promote innovative thinking (Evans et al., 2014). Both Islamic banks activate their stored knowledge (whether from the bank's database or from the employees' memories) to be used in their routines jobs or daily business activities. Employees who have involved in a training or workshop have to implement their new skill and knowledge into their daily works. For example, a participant said:

“I took e-banking training for two weeks in Makassar Central Office. They taught us how to use e-banking service such as SMS banking and telephone banking. I use that knowledge to teach my customer and promote that banking services to our customers.”

Some employees had also worked at some conventional banks for a long period before they worked at Islamic banks. Those employees do not possess sufficient Islamic economic knowledge, while employees who graduated from Islamic education institution do not have sufficient conventional economy and business knowledge (Karim, 2016). These phenomena become a significant barrier to knowledge implementation in the banks' daily business operation.

To overcome such barrier, an intervention from an expert to apply the knowledge management correctly and efficiently is required. The expert can be individuals or professional organisations that can be involved in a training and workshop to increase the knowledge and use in daily work process. For example, in efforts to uphold *sharia* identity and work ethic and how to implement in the banks' business, Bank Syariah Mandiri has fostered cooperation with some Islamic economic institutions, such as Syariah Economy Banking Institute (SEBI), Tazkia Institute and Karim Business Consulting. Leadership programs based on Islamic norms have also regularly been conducted in cooperation with ESQ Leadership Centre, which hopes to generate appreciation of leadership values among the management members, so as not to put priority solely on worldly matters but also on spiritual intelligence. This is to encourage one to be more self-introspective, though, effective and having increased spirit for the struggle. Similar strategy is also used by Bank BNI Syariah which they cooperate with Muhammadiyah Organization and Badan Amil Zakat Nasional (National Alms Organization).

#### 4.2.6 Learning continuity and improvement

Davis (1999) argues that knowledge is formulated through accumulated learning and expertise as they apply to a problem or activity. This implies that organisations such as Islamic banks should encourage their employees to learn and practice in order to accumulate knowledge and expertise. Both Islamic banks use various strategies to encourage their employees learning and practices. The banks held a number of training both technical and soft skills competencies. Bank BNI Syariah, for example, has held 123 training programs and involved 2,890 employees across branch offices in 2014 (BNI, 2015).

The numbers of learning mechanisms have been applied by both Islamic banks to support their employees learning. One of those mechanisms is training program such as basic Islamic banking training and advanced Islamic banking training. All new staff is required to join a training program before they are fully employed. This training is aimed at providing them with the knowledge and skill related to their job at Islamic banks. Bank Syariah Mandiri, for example, has established a BSM Training Centre since 2003. A participant said “the training programs are oriented at improving competence, skill, attitude, motivation of employees both in term of hard skill and soft skill including internalisation and transformation of corporate culture.”

According to human resources manager of BSM, the basic banking training for new employees is held for three months and other training to improve staff quality is held one month and two weeks such as ‘know your customers training’. In the Bank Mandiri Syariah, annual report 2014 stated that to add more specific skills and employees’ quality, a variety of practical education and training programs have been on the run including service excellence, export/import, financing analysis, payment point, product knowledge, risk management, *syaria* accounting, information system operation skills, management trainee, collateral taxation, leadership and stress management and financing problem solving.

Knowledge at BNI Syariah was also improved through seminar and workshop. The seminar and workshops are held regularly every year at central office and branches office. “We often held seminar and workshop to transfer and share knowledge among the staff” and “the seminars and workshops are held on both national and local scales” said a participant from BNI Syariah.

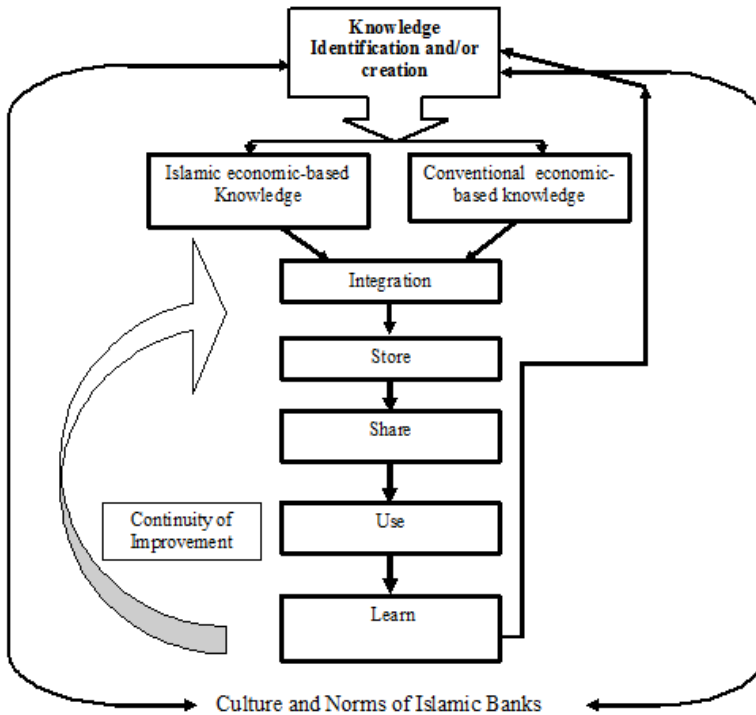
Bank Mandiri and Bank BNI Syariah, even, established e-learning systems to support continual learning of their employees. They have information systems that store all knowledge and intelligence which can be accessed by their employees anytime. As a result, employees knowledge can continually improve and used in the daily work. This helps the bank to innovate all the time to improve their competitiveness.

## 5 Conclusions

The findings show that the knowledge management in Islamic banks was carried out through eight steps. Previous studies such as Birkinshaw and Sheehan (2002), Evans et al. (2014) and Hosseingholizadeh (2014) did not include ‘integration’ in their knowledge management lifecycle model. However, this found that Islamic banks have different characteristics compared to conventional organisations, which requires a new model of knowledge management lifecycle. After the knowledge is identified and created, it cannot be stored directly in organisations’ database or memory. The knowledge in Islamic banks should be integrated to meet the banks culture and vision because the banks are operated under Islamic values and norms. Knowledge in Islamic banks come from Islamic and non-Islamic external institutions which then require adaptation to meet the Islamic banks, vision, cultural and norms. Organisational culture has been considered as an important element for an organisation knowledge management (Mansouri et al., 2018). The culture shapes the employees norm and belief across knowledge management lifecycle. As a result, knowledge management lifecycle model is revised. New model of knowledge management that meets Islamic banks characteristics is proposed as in Figure 1.



**Figure 1** Knowledge management lifecycle in Islamic banks



The lifecycle model proposed in Figure 1 represents knowledge management lifecycle stages in the two cases study of Islamic banks in Indonesia. The model may not be generalised to the entire Islamic banks population across the globe. However, the model may shed new insight regarding how knowledge in Islamic banks should be managed to support banks performance. In particular, knowledge management in Islamic banks should pass integration stage before the knowledge is stored, shared, used and improved to support the bank business.

## 6 Future research

One important finding of this study is that knowledge management in Islamic banks does not necessarily follow knowledge management model proposed by previous studies which were conducted in conventional organisation contexts because the nature of knowledge in Islamic banks is unique. Islamic bank poses conventional-based and Islamic-based knowledge which requires integration before it is stored, shared, used and improved within Islamic banks to support their business performance. Future research need to study how the integration process of all knowledge in Islamic banks should be managed in order to increase benefit and competitive advantage of the bank. Future research may also need to build a suitable model for knowledge integration in Islamic banks.

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