

Information Technology (IT) Capability and Business Process Reengineering (BPR) Implementation: Evidence from Malaysian Islamic Banks

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Abstract: Information technology (IT) has always become as a critical tool for the execution of business strategy and a driver of business performance. With rapid changes in particular to the financial markets, IT capability seems to be the backbone to improve the business processes. Innovative banking services and personalized portfolio management are evolving as the market consolidates due to mergers and acquisitions of up-to-date strategy. As a result, the focus is no longer on cutting costs alone, but rather on simultaneously improving services to customers. Many companies attracted to adopt the Business process reengineering (BPR), as a major management approach that focuses on doing things in a better way in order to achieve a radical improvement on quality, speed, customer service, and reduction in cost. Number of studies suggested IT should be used together with BPR to develop the organizational capabilities which leads to superior organizational performance. Nevertheless, there are also views that IT is ubiquitous and cannot be a source of sustained competitive advantage. Hence, this paper interested to examine the role of information technology (IT) capability and business process re-engineering (BPR) implementation in the Islamic bank in Malaysia. Data has been collected through a hand-delivery method. A simple random sampling would be used for sample selection and sent to Islamic banks' managers. The expected outcome of this study would provide important insights to both managers and researchers for further understanding on the effects of BPR factors and IT capability on organizational performance of Islamic banks.

Key words: *IT capability, Business process reengineering, Islamic banks, Malaysia*

INTRODUCTION

Market changes and technological needs have pressured many companies to adjust their strategies, improving their processes and offerings. These improvements cannot be accomplished unless the information technology can be deployed in effective manner [1]. IT capability seems to be as the enabler to improve the business processes especially to the bank services. To cope with the emerging trend of bank technology, banks should enhance the customer service quality, where the focus now is more on delivering efficiency and responsive performance.

Many companies have attracted to implement the Business process reengineering (BPR). BPR has gain its popularity as a major management approach that focuses on doing things in a better way in order to achieve a radical improvement on quality, speed, customer service, and reduction in cost. BPR implies transformed processes that together form a component of a larger system aimed at enabling organizations to empower themselves with contemporary technologies, business solutions and innovations.

It is highly critical for financial institutions to adapt quickly the emerging technology wave. The delayed in adopting to the technology will hindered the institutions from providing efficient processes, improving the customers base, capitalization and importantly, improving their bottom lines. Today, most banks, including the Islamic banks, have offered technology based services to their customers. Islamic banking received growing demands worldwide where it was reported able to achieve 27% against 19% for conventional banks in 2007 [2]. In the context of Malaysia, at the end of 2008, Islamic banking has increased its share of assets in the banking sector to 17.4 percent [3]. Its broad appeal is attributed to its ethical banking theory and practice. Islamic banking prohibits not only *riba* (usury) but also involvement in other activities such as speculation, liquor and gambling which are deemed unethical [4]. A study has been conducted on the BPR practices in Malaysian banks [5], yet, the study did not explicitly explained factors that contributed to the performance especially in the Islamic banks perspectives

Due to the importance of the Islamic banks industry, this paper interested to explore the role of IT capability and business process reengineering in enhancing the banks performance. In addition, the study keen to understand the IT connection to the performance as there are claims that IT cannot be a source of sustained competitive advantage [6][7].

LITERATURE REVIEWS

Business Process Reengineering

In a volatile global world, organizations enhance competitive advantage through Business Process Reengineering (BPR) by radically reengineering whole processes. BPR gained immense and unexpected popularity due to the early articles of [8] and [9]. The average success rate achievement of implementing BPR in developed countries, Multi National Corporation was 55%, being 61% achieved in the USA and 49% in Europe [10]. The majority of studies on BPR have focused on the importance of the various factors for successful implementation in the manufacturing industry, while relatively few studies have been conducted in the banking industry [11]. The BPR studies that examined lessons learned from BPR approaches

were case studies [12][13][14][15][16][17][18][19][20].

CSFs of BPR implementation has been classified into five dimensions, with each construct having items that measured it [20]. Therefore, BPR factors in the present study have been adapted based on the scope of study and fit to the banking industry, which is in line with the previous studies [19][20][21]. BPR factors are the independent variables, which include 1) Change Management, 2) Strategy alignment, 3) Management Commitment, 4) Customer Focus, 5) Information Technology (IT) Investment, 6) Process redesign, 7) Adequate Financial Resources and 8) Less Bureaucratic Structure.

The BPR concept was introduced in Malaysia in the 1990s and gained popularity when Malaysia's famous Vision 2020 was revealed by former Prime Minister, Tun Dr. Mahathir Mohammad in the year 1994. Malaysian government has successfully implemented many reengineering projects such as MyKad - a multipurpose digital application card for all citizens over the age of 12, Public Services Network (PSN) – an online network application system that enables user to make payment or renewal of various Government agencies' services at the Post Offices and E-Government (began in 1997 with the launch of the Multimedia Super Corridor's (MSC) E-Government Flagship Application) for the sake of the public and the country by changing the way government interacts with citizens and businesses through new ways of the government's operation.

IT Capability

Reengineering of operational processes undertaken in the bank should be handled by the project management expertise within the IT department [22]. The IT capability includes both the technical and managerial expertise required to provide reliable physical services and extensive electronic connectivity within and outside the firm. IT increases the market share of the bank through offering a product or service that is not offered by others, e.g., those customers who prefer private/personalized services or use of debit cards have become the focus of retail and investment in banking. Therefore, this study uses the resource-based view (RBV) of the firm, dynamic capability's theory and complementarity theory to explain the relationship between BPR factors and organizational performance under the influence of IT capability. RBV provides better understanding on the factors

affecting strategic alignment by considering those factors that represent set of resources and capabilities [23][24]. The application of IT capability is to enhance the service-delivery process, produce new products, processes, strategy, and work faster, eliminate all communication barriers within the organization, and empower workers to link up with customers and suppliers to achieve the competitive advantage [25][26].

Malaysian Islamic Banking

The first Islamic bank in Malaysia was established in 1983. In 1993, commercial banks, merchant banks and finance companies were allowed to offer Islamic banking products and services under the Islamic Banking Scheme (IBS). These institutions however, are required to separate the funds and activities of Islamic banking transactions from that of the conventional banking business to ensure that there would not be any co-mingling of funds. In the early implementation period of Islamic banking in Malaysia, the performance was lower than conventional banks [27]. Nevertheless, the industry has progressively growing from year to year [28][29]. The development of banking industry that is based on shariah principle in Malaysia is supported by the government of Malaysia and contributed by the aspiration to develop a strong Islamic banking in the region [30].

Today, Malaysia has successful implementing a dual banking system and able to obtain a full-fledged Islamic banking system operating side by side with the conventional banking system. It has been the Government’s aspiration to develop the country as the capital or hub of Islamic banking worldwide [31]. Under the Economic Transformation Programs (ETP), the Malaysian Government and Bank Negara Malaysia (BNM) predicted that the Islamic banking sectors would achieve more than 40% of growth towards 2020 [32]. Recognizing the importance to the country, Islamic banks are expected to be flexible, being fast in taking action, and maintaining low production. Furthermore, previous study has emphasized that Malaysian banking industry should increase the speed, deliver high quality output and reduce its operating cost in order to survive [5].

METHODOLOGY

This study focused on descriptive and causal research (hypothesis testing). Descriptive research would be undertaken to identify the implementation level of BPR and IT capability attributes by Islamic banks. The causal research or hypothesis testing and the correlation approach are conducted in the study to explain the relationship between two independent variables and the dependent variables. Following the discussion throughout the literature, a framework was developed to examine the BPR factors and IT capability on Malaysian Islamic banks performance, as below:

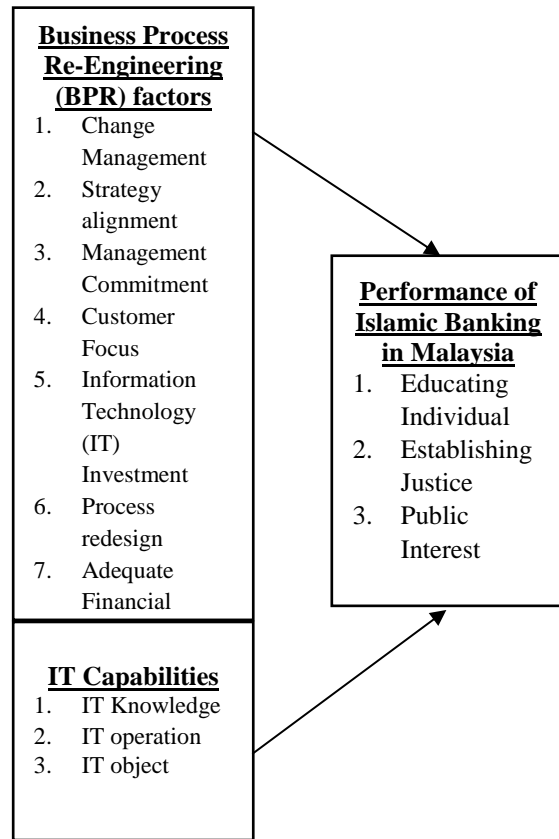


Figure 1: Conceptual framework

The dependent variable in this study is the Islamic banking performance. This refers to the bank’s effectiveness of activity’s outcomes in terms of financial and non-financial. This study considers multi-dimensional performance measures as they offer more complete measurement than the unidimensional approach. Meanwhile, the independent variable of this study comprise the

BPR factors and IT capability. The BPR factors were derived from previous studies [32][33]. The BPR factors includes change management, management commitment, customer focus, information technology investment, process redesign, adequate financial resources and less bureaucratic structure. For IT capability, it is defined as a firm’s ability to assemble, integrate and deploy IT based resources [34]. The population of the study is the Islamic banks Headquarters (HQs) in Malaysia. According to the directory of Association of Islamic Banking Institutions Malaysia, there are 10 domestic banks, 10 locally incorporated foreign banks, 5 development financial institutions and 1 international financial institution, which serves as 26 organizations as the study population. From the list of companies, 16 Islamic banks have been participating in the study. However, due the small population, four sets of questionnaires were distributed to every bank. This approach was consistent with other studies [33][36] where they suggested to use multiple respondents to avoid bias. From 64.sets of questionnaires, only 42 sets (65%) are returned and usable for the study.

Hypotheses developed for this study are:

H1: There is positive relationship between BPR factors towards Islamic banks performance

H2: There is positive relationship between IT capability towards the Islamic banks performance

RESULT ANALYSIS AND DISCUSSIONS

Based on the 65% respondents, the data was effectively analyze through different demographic factors among respondents. Demographic information was divided into two categories namely personal information and BPR information. The gender composition showed that 51.4% were male and 48.6% were female. With regards to the objectives of BPR implementation, most of the respondents agreed that BPR will increased the revenues. The lowest percentages (11.4%) received for item “Proactive approach to prepare the organization”. The composition of respondents based on objective of BPR is shown in Table 1:

Table 1 *Composition of the Objective of BPR*

	Percent
Increasing revenues	31.4
Improving the quality of customer service	28.6
Reactive approach to competitive pressure	14.3
Reducing operating cost	14.3
Proactive approach to prepare the organization	11.4

The finding for BPR factors show that the mean for Change Management, Strategy alignment, Management Commitment, Customer Focus, Information Technology (IT) Investment, Process redesign, Adequate Financial Resources, Less Bureaucratic Structure is 4.6222, 4.7571, 4.7388, 4.6357, 4.6343, 4.5714, 4.6238 and 4.5543. For the IT capability, mean for IT knowledge is 4.6857, IT operation 4.7810 and IT objects is 4.6514. The highest for standard deviation is IT operation (0.56269), skewness- IT object and for kurtosis is IT knowledge (0.471), as shown in Table 2.

Table 2 *Summary of Descriptive Analysis*

Items	Mean	Standard Deviation
Dependent variable (DV)		
Islamic banking performance	4.5667	.35
Independent variable (IV)		
<u>BPR factors</u>		
1.Change Management	4.6222	.39
2.Strategy alignment	4.7571	.52
3.Management Commitment	4.7388	.50
4.Customer Focus	4.6357	.45
5. IT Investment	4.6343	.43
6.Process redesign	4.5714	.37
7.Adequate Financial Resources	4.6238	.34
8.Less Bureaucratic Structure	4.5543	.51
<u>IT capability</u>		
1. IT Knowledge	4.6857	.47
2. IT operation	4.7810	.56
3. IT object	4.6514	.37

Based on analysis result, the reliability test for dependent and independent variable in this study was acceptable and very good. For dependent variable, Cronbach's Alpha value for Islamic banking performance a very good reliability which is present 0.893. While the Cronbach's Alpha for overall independent variable (BPR factors- 0.930) and for (IT capability – 0.837) as portrayed in Table 3. Meanwhile, Table 4 below shows the summary of the correlation analysis and full statistical of correlation analysis.

Table 3 Reliability Statistic for the Data Gathered from Survey

Items	Number of Items	Cronbach's Alpha
Dependent variable (DV)		
Islamic banking performance	18	0.893
Independent variable (IV)		
BPR factors	45	0.930
IT capability	16	0.837

Table 4 Pearson's Correlation between the Constructs

	Islamic banking performance	BPR factors	IT capability
Islamic banking performance	N/A		
BPR factors	0.532** 0.01	N/A	
IT capability	0.482** 0.03	0.683** 0.00	N/A

The correlation analysis between BPR factors and IT capability toward Islamic banking performance in Malaysia show the positive correlation where $r = 0.532$ for BPR factor and performance and $r = 0.482$ for IT capability with performance. It means that BPR factors and IT capability have significant correlation toward Islamic banking performance in Malaysia. While the correlation between BPR factors and IT capability show that there are have correlation at $r = 0.683$. Hence, both hypotheses H1 and H2 are accepted.

DISCUSSION

BPR factors and performance of Islamic banking in Malaysia

The analysis shows the significant relationship between BPR toward the performance of Islamic banking. According to [5][22][33], BPR have a significant relationship with organization performance. It also supported by [37] that the implementation BPR approach in organization will give biggest benefit and achieve the dramatic improvement [38]. Most researchers are generally agreed that the BPR was the best approach for continuous improvement in organization performance [39]. In terms of individual factors, Strategy alignment, Management Commitment, Information Technology (IT) Investment, Process redesign and Less Bureaucratic Structure have significant impact to the Islamic banking performance in Malaysia. Strategic alignment is a method to understand the relationship between process and strategy [40]. Hence, to be successful, Islamic banks should align all the process with BPR project to ensure there is under control. There were significant relationship between management commitment and banking performance [20][22]. The significant relationship explains that the higher management commitment increased the banks performance. The significant management commitment was proved based on findings result by [22][23]. Organization requires IT infrastructure because IT will integrate and connecting other department together and minimize the errors and will put the all system together [41][42]. By integrated and linked together, every process and activity will be solve it immediately. Furthermore, [42] states that IT is very vital to help organization crafts and executes BPR as a strong technique in management. Process redesign also one of the important factor in order to successful manage Islamic banking. It has been viewed that the effective process redesign as the ability of finding a new way of adding value to customers [43]. It means that, every redesign should have a direct impact on customer value and cost [11]. It will help bank to improve their performance. Organizations could implement less bureaucracy to encourage innovativeness [44]. It also supported by [45][46] where, they are suggested ways to achieve successful results in BPR implementation by significantly changing the organization's structure, with emphasis on cross-functional work teams. That the reason this study found the process redesign have significant impact toward performance.

Others factor such as Change Management, Customer Focus and Adequate Financial Resources have insignificant or not influence the performance. Based on previous researchers, Change management includes communication, motivation,

empowerment, training, reward, and education in which all of these items do not influence the overall banks performance. Insignificant relationship between change management and bank performance also have been found [22][33] through study to examine the relationship between change management such as training and development to enhance performance [47]. Unfortunately, the result shows that there is no relationship between change management and organizational performance. In term of customer focus, almost all the previous researchers found that there was strong relationship with performance of Islamic bank. Nevertheless, this study found customer focus is insignificant influence the performance of Islamic banking. The findings from [22], demonstrate that customer focus does not directly influence the overall performance of banks in Nigerian setting. This also supported from study of [48], who found high level of customer loyalty does not lead to increase profitability. Finally, Adequate Financial resource was found insignificant to Islamic banking performance in Malaysia in this study perhaps due the weak inter-correlation values between variables. This could cause an insignificant result in the multiple regressions [49].

IT capability and performance of Islamic banking in Malaysia

The findings indicate there is significant relationship between IT capability and the Islamic banking performance. High level of IT knowledge enables the smooth implementation of the organization's strategy, develops reliable and cost effective systems within the organization, and anticipates customer needs [41]. It also supported by [22], where high levels of IT capability are related to a high level of organizational performance. Therefore, this study indicates that IT capability (IT knowledge, IT operations and IT objects) is able to influence the overall performance of the Islamic banking in Malaysia. Previous studies also had found that there are positive relation and enhance the organization performance [41][50]. Nevertheless, referring to the individual factor effect, the study found only IT knowledge has influence the Islamic banks performance. The other two factors namely the IT operation and IT object were insignificantly influenced the relation even though there is a positive relationship. The insignificant relationship between both variable might be as a result of the weak inter-correlation values between the variables. This could cause an insignificant result in the multiple regressions [49].

CONCLUSION

The purpose of this research is to examine the relationship between Business Process Re-Engineering (BPR), Information Technology (IT) and performance of Islamic banking in Malaysia. The overall result shows that the BPR factors and IT capability are able to influence overall performance of Islamic banking in Malaysia. However, for individually, the analysis using multiple regression analysis indicates that only Strategy alignment, Management Commitment, Information Technology (IT) Investment, Process redesign and Less Bureaucratic Structure have significant impact to performance of Islamic banking in Malaysia. While for IT capability, only IT knowledge have significant influence towards Islamic banking performance in Malaysia. Finally, the research model has been developed in which the key variables in this study are BPR factors, IT capability and performance of Islamic. The researcher suggested to the entire banking manager to be more focuses on BPR factors and IT capability to enhance banking performance. The study also provides new empirical study about the implementation of BPR factors and IT capability towards the performance of Islamic banking especially in Malaysia. Henceforth, the researcher hopes that this study will provide assistance to other potential future researchers to extend and explore exhaustively of this topic area.

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