

THE MEDIATING ROLE OF MANAGEMENT INFORMATION SYSTEM BETWEEN BUSINESS PROCESSES MANAGEMENT AND OPERATIONAL EXCELLENCE IN BANKS

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Abstract

Management Information System (MIS) is important to manage the Business Processes (BP) in the banks such as manage the information workflow between the workers and manage the workers responsibilities. The management of BP effects on the Operational Excellence (OE) in the banks like innovation and improve the quality of services. The working information and functionality should be defined well to maintain the OE in the banks. The main challenge in this context is the efficiency and effectiveness of MIS functions such as information throughput, transaction speed, and usability. The weak functions of MIS could decrease the management level of BP and consequently minimize the growing of OE in the banks. This study aims to propose a conceptual model in the relationship between the BP management and MIS functions, and its impact on the OE in the banks. For, this purpose, the literature in this domain is reviewed and the research gaps are identified. The conceptual model is constructed based on three main variables; BP management (independent), MIS functions (mediating), and OE (dependent). The dimensions of the BP management are the information workflow and workers functionality. The dimensions of the MIS functions are the efficiency and the effectiveness. the dimensions of OE are the innovation and the quality improvement. The conceptual model presents the

research hypotheses that would be tested. There is a limitation in the conducted study on the relationships the overall study variable, especially, the conducted studies on the banks working environment. Thus, the contribution of this study is presentation of the relationships between the various study variables based on clear model.

Keyword: business processes Management; management information system functions; operational excellence; Banks; conceptual model

1.INTRODUCTION

Across industries and around the globe, today's organizations find themselves under continued pressure to optimize business performance (Alaaraj et al., 2018). With the dynamic nature of the marketplace and the level of complexity, this represents an ongoing journey, requiring a focus on the fundamentals of Operational Excellence (OE) (Alaarj et al., 2017a). The definition of OE is best expressed by focusing on both the ongoing aspects as well as the desired outcomes (Oakland, 2014). The people excellence is one of the critical components of OE (Botha, 2016; Campbell & Reyes-Picknell, 2015; Oakland, 2001). The excellence of people contributes the quality improvements and the innovations in the organizations, which play important roles in improve the competitive advantages of the businesses (Alaaraj, 2018a,b).

For effective operational excellence, the management of business process is necessary to manage all resources in the organization (such as asset, people, and information) (Georgakopoulos et al, 1995). The organizations must constantly reconsider and optimize the way they do business and change their information systems and applications to support evolving Business Processes (BP) (vom Brocke et al., 2014; Hillet al., 2007; Liu et al., 2005; Harmon, 2003).

BP may be understood to be the way in which work is organized, co-ordinate and focused to produce the services (Van Der Aalst et al., 2003). As such, BP may be used to describe the flow of materials, information or knowledge. BP may also be understood to be the way in which management chooses to co-ordinate work through the use of workflow information and the functionality (Jeston&Nelis, 2014; Van Der Aalst et al., 2013; Weske, 2012; Van Der Aalst et al., 2004). The functionality is about manage the working responsibilities of the employees, while the workflow is about manage the information flow between the employees in the context of working services.

The management of BP is necessary to manage the overall operations in the organization according to effective processes. The necessity of BP management grows when the organization workflow and functionality is complex and nested (Alaarj et al., 2017b). IT is considered one of the most important enablers of process change. Together, processes and information technology can be seen as a new industrial engineering that may revolutionise the way in which organisations operate (Hin, 2015; Davenport, 2013; Attaran, 2004).

Most of the advocators of the business process management highlight the importance of the role that Information Technology (IT) plays in the business process (Chang, 2016; Weske, 2012; Trkman, 2010; Laudon&Laudon, 2004; Broadbent et al., 1999;Davenport& Short, 1990). Many argued that IT should be seen as an enabler of organisational change rather than as a tool to implement business processes. The initiative to move towards BP in many cases originates from the IT departments.

In last two decades, Management Information Systems (MIS) are used to manage information, make better

decisions and improve the execution of a company's BP (Christopher, 2016; Karimi et al., 2007; Laudon & Laudon, 2004; Tallon et al., 2000; Bhatt, 2000). MIS can be defined as computer hardware and software that manage the organizational flow between internal organization sectors (such as departments and workers) or between organization and other organizations in order to accomplish various working activities (kroenke, 2011). MIS enhance BP because they cannot only be used to increase the efficiency of existing processes, but also to enable new processes that are capable of transforming the way in which an organization conducts business (Shipsey, 2010).

The necessity to evaluate the functions of MIS has emerged from the importance of MIS in effectiveness and efficiency of work processes in an organization, causing rapid growth of demands in terms of resources performances in Information System. Evaluation of Information System performances means evaluation of performances in hardware, software, computer networks, data and human resources (Laudon & Laudon, 2004). Der Aalst et al., (2013) argued that the effectiveness and efficiency of information systems would be measured based on many dimensions such as response time, accessibility, characteristics of used computer language, realization of user's demands, correction of mistakes, accuracy of output, and promptness of output (Alaarj et al., 2016a,b).

To sum up, this research focuses on review the role BP management on OE through useful MIS functions in banking industry. The banks represent the major financial hub in any country due to importance of banks assets and services for the growth of country economy (Levine, 2004). There is wide number of banks services such as provide loans for customers, money transferring, operate the customers and government capitals, help the government and organizations to distribute the employees' salaries, and involve the stock exchange in the country. The OE of banks services is necessary to assure the services quality, reduce the operational costs, avoid the operational mistakes, and deliver the services in right time. Thus, the banks could increase their profits and assure the customers satisfactions.

The next section presents the literature review of OE, BP management, and MIS in the banks. Section 3 presents

the proposed conceptual model. Lastly, section 4 provides the conclusion and future works of this study.

2.LITERATURE REVIEW

There are many theories support the importance of the relationship between the OE, BP management, and MIS functions, and the clearest two theories are the Management by Objectives (MBO) and Organizational Improvement (OI). The MBO is a theory that focuses on the process of defining specific objectives within an organization that management can convey to organization members, then deciding on how to achieve each objective in sequence (Dinesh & Palmer, 1998). On the other hand, the OI theory explains that the BP should be managed effectively according to on the input information, and these processes involve the workers in organization such as leaders and employees. The processes output represents the organizational improvements such customers satisfaction, and products quality (Ji & Salvendy, 2002). Both MBO and OI theories agreed that the OE is the desired result any organization. The OE will be improved through the management of BP in the organizations, and the MIS functions should be useful to address the BP management based on the working environment.

2.1. Business Processes Management.

Business Process Management (BPM) the management model or structure of the working processes in the organization in order to achieve excellence or the best outcomes (Chang, 2016; Owen & Raj, 2003). The conduction of BPM should include the identification of the main processes and its documentation, in order to select the improvement strategy and the possible implemented changes to the processes (Melcher, 2014). There are two main variables are referring to the BPM, information workflow and working functionality.

BP use information to tailor or complete working activities. Information, unlike resources, is not consumed in the process rather it is used as part of the transformation process (Österle, 2013; Alaarj et al., 2015; 2016). Information may come from external sources, from customers, from internal organizational units and may even be the product of other processes. In many organizations the term workflow is used to refer to an automated BP, which means that the coordination,

control and communication of activities is automated, but the activities themselves can be either automated by information systems or performed by people (Polyvyanyy et al., 2015).

The BP functionality is much related to workflow, a functional business is the working tasks and responsibilities that assigned to worker, teamwork, or department (Tang et al., 2013; Parker, 2003; Shen et al., 2003). A functional business orientation organizes a company along functional lines, such as sales and production (Nesheim, 2011; Srivastava et al., 1999). A process orientation means that the company focuses on business processes, such as order processing or strategic planning. In each case, the companies optimize their activities, either within the functional units or for each process (Chan & Qi, 2003). The main difference is that optimizing one functional unit may harm another function, but optimizing the business processes across organizational lines helps the whole company (Scheer & Nüttgens, 2000).

2.2. Management Information System

The utilization of information technology has been magnificently increased in service industries, particularly, the banking industry, which by using Information Technology (IT) related products such as internet banking, electronic payments, security investments, information exchanges (Karim & Hamdan, 2010; Berger, 2003). Using IT facilities, the financial organizations can deliver high quality services to client with less effort. Management Information System (MIS) is one of the major computer based information systems (Stair & Reynolds, 2015). Its purpose is to meet the general information need of all the managers in the firm or in some organizational subunit of the firm. Subunit can be based on functional areas on management levels (Stair & Reynolds, 2015; Asemiet al., 2011). The importance of MIS comes from the benefits that generated by that system such providing useful information in timely manner, improved labor productivity, cost savings, providing the information without any delays and mistakes, and improved the management of work (Al-Mamary, et al., 2014).

Mall-Gharaibeh and Malkawi (2013) argued that, the main issue of MIS system in organization is how to manage the software and hardware equipment in

organization to assure the organizational performance. The idea here is not only about install MIS in organization but it is about managing MIS functions according to organization structure and information flow between various sectors in order to enhance the business processes and improve the operational excellence of organization. According to Ward and Peppard (2016), there are two directions of MIS functions which are the efficiency and effectiveness. Efficiency and effectiveness are definitely related. However, success in one area does not necessarily imply success in the other. Efficiency MIS metrics focus on the technology itself such as throughput, transaction speed, and system availability. While these efficiency MIS metrics are important to monitor, they do not always guarantee effectiveness. Effectiveness MIS metrics are determined according to an organization's goals, strategies, and objectives such as Usability and users' satisfaction.

The following are the metrics of MIS efficiency (Gunasekaran et al., 2007; Scudder & Kucic, 1991; Cyrus, 1991): a) throughput: the amount of information that can travel through a system at any point in time; b) transaction speed: the amount of time a system takes to perform a transaction; c) system availability: the number of hours a system is available for users; d) information accuracy: the extent to which a system generates the correct results when executing the same transaction numerous times; e) response time: the time it takes to respond to user interactions such as a mouse click. On the other hand, the following are the metrics of MIS effectiveness (Gunasekaran et al., 2007; Scudder & Kucic, 1991; Cyrus, 1991): a) usability: the ease with which people perform transactions and/or find information; b) users' satisfaction: measured by satisfaction surveys, percentage of existing users retained, and increases in revenue dollars per customer; c) conversion rates: the number of customers an organization "touches" for the first time and persuades to purchase its products or services; d) financial such as return on investment (the earning power of an organization's assets) and cost benefit analysis (the comparison of projected revenues and costs including development, maintenance, fixed, and variable).

2.3. Operational Excellence

For businesses and indeed any organization to be successful in the long term, they must be engaged in a relentless quest to make things better. Failure to make this an organizational priority will inevitably result in organizational decline (Khanam et al., 2016). OE is an all-embracing approach for optimizing everyday operations, in configuration with the organization's strategic objectives and customer expectations (Zehir et al., 2012). It is a philosophy of leadership, teamwork and problem solving that leads into constant improvement throughout the organization by looking at the wishes of the customer, empowering employees, and maximizing on the existing activities in the process (Duggan, 2009). OE includes two important practices; continuous improvements of services and employees. Innovations are adopted by organizations in order to improve the level of services delivered to various users and with the broad aim of increase their profitability and market share (Obasan & Soyebola, 2012). Knowledge on the processes of innovation adoption and the characteristics of innovative organizations is evolving in various sectors of industries (Walker, 2008; Boyne et al. 2005). For the creation of valuable output and achievement of operational excellence, specific and distinctive competencies and resources of the firm are bundled and revitalized (Oakland, 2014). The product and service quality improvement could be enhanced through competitive advantage along with the cost and production reduction, the service and product speedy delivery and be able to provide accuracy in the production and services (Schulze & Hoegl, 2006; Alaaraj, 2018a,b). Quality of services and products can be achieved by adding unique attributes to products to enhance their excellence so as to benefit customers (Pratt et al., 2006). Table 1 summarizes the related works to this study.

3. PROPOSED CONCEPTUAL MODEL

Based on the literature review, there are various theories support the relationship between the research variables; business processes, management information system, and operational excellence. Theories such as MBO, TQM, and IO are aim to achieve the operational excellence in organization through manage the business processes using systems like information system. Theoretically, the information workflow and working functionality are important variables of business processes, the efficiency

and effectiveness are important variables of information system, and the most important variables of operational excellence are the innovation and continue improvements of services.

However, there are two main research gaps are identified, the first gap of this research is the limitations of conducted works on the impact of MIS functions on the enhancement of BP management in the banking sector. There are few research conducted to investigate this impact in the banks. The second research gap is the studies limitation on the impact of BP management on OE through MIS functions in banks. The operational excellence could be improved through manage the information workflow and employee's functionality supporting effective and efficient management information system.

Thus, it is important to examine the role of business processes on operational excellence through management information system functions in the banks. Figure 1 illustrates the theoretical framework of this study. The performance management of BP variables (workflow and functionality) could be evaluated based on the efficiency and effectiveness of MIS function. Therefore, the role of the enhancement on PB management on OE variables could be investigated in the banks. This investigation offer good understanding of the situation of MIS in the banks and the requirements that needed to enhance the MIS functions in order to enhance the PB management and OE

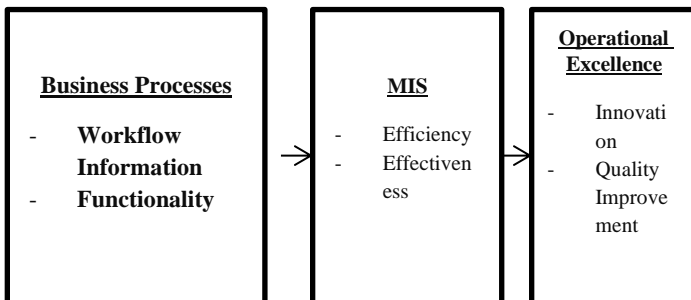


Figure 1: Theoretical Model of the Study

Based on the various variables in this study (BP, MIS functions, and OE), Figure 2 presents the proposed model that could be investigated to address the research purpose. The proposed mode could try to find new phenomena in the relationships between BP management (information workflow and jobs functionality) and OE (innovation and quality

improvement through MIS functions (efficiency and effectiveness). This model is important due to limitations of conducted studies in this area in banking sector. The previous studies were not explored the relationships between BP management and MIS functions, and its impact on OE of the banks.

According to proposed model, there are three main research hypotheses need to be tested, and these hypotheses are as the following:

- **H1:** There is a significant relationship between BP management and MIS functions in the banks.
 - H1a: There is a significant relationship between BP workflow and MIS efficiency in the banks.
 - H1b: There is a significant relationship between BP workflow and MIS effectiveness in the banks.
 - H1c: There is a significant relationship between BP functionality and MIS efficiency in the banks.
 - H1d: There is a significant relationship between BP functionality and MIS effectiveness in the banks.
- **H2:** There is a significant relationship between of MIS functions and the OE in the banks.
 - H2a: There is a significant relationship between MIS efficiency and OE innovation in the banks.
 - H2b: There is a significant relationship between MIS effectiveness and OE innovation in the banks.
 - H2c: There is a significant relationship between MIS efficiency and OE quality improvement in the banks.
 - H2d: There is a significant relationship between MIS effectiveness and OE quality improvement in the banks.
- **H3:** There is a Mediating significant of MIS functions on the relationship between the management of BP and the OE in the banks.

4.CONCLUSION AND FUTURE WORKS

The management of BP is important to maintain the OE, and MIS plays mediating role in the management of BP. MIS manage the information workflow and workers functionalities, which enhance the BP in the organization, and consequently improve the OE. This study proposes a conceptual model to show the relationships between the BP, MIS functions, and OE. This relationship is important to be reflected in the working environment of the banks. In the future, the data will be collected and analyzed to test the hypotheses of the proposed model. The data would be collected from banks managers and employees before conduct analysis using suitable tools such as AMOS

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