Change Management for Information System in Public Service

Article *in* Research · August 2020

CITATION
1

READS
200

6 authors, including:

Manzur H Khan
American International University-Bangladesh
19 PUBLICATIONS **38** CITATIONS
SEE PROFILE

Nurakmal Ahmad Mustaffa
Universiti Utara Malaysia
9 PUBLICATIONS **3** CITATIONS
SEE PROFILE

Dr. Md. Mamun Habib
Independent University, Bangladesh
166 PUBLICATIONS **869** CITATIONS
SEE PROFILE

Mahadi Hasan Miraz
Sunway University
66 PUBLICATIONS **338** CITATIONS
SEE PROFILE

ISCTJournal ISCEA
International Supply Chain Technology Journal
ISSN 2380-1204

Change Management for Information System in Public Service

S.A.M Manzur Hossain Khan[1], Nurakmal Ahmad Mustaffa[2], Md. Mamun Habib[3], Mahadi Hasan Miraz[4], Ferdoush Saleheen[5], Mashiour Rahman[6]

[1]Decision Science, Universiti Utara Malaysia, manzur@aiub.edu, Malaysia, [2]SQS, Universiti Utara Malaysia, Malaysia, [3]School of Business, Independent University, Bangladesh, [4]School of Technology Management & Logistics, Universiti Utara Malaysia, Malaysia, [5] Decision Science, Universiti Utara Malaysia, Malaysia, [6]Decision science, Universiti Utara Malaysia.

[1]manzurhkhan@gmail.com, [2]nurakmal@uum.edu.my, [3]mamunhabib@iub.edu.bd, [4]mahadimiraz1@gmail.com, [5]ferdoushsaleheen@gmail.com, [6]mashiour@gmail.com

***Abstract*-Public organizations, in demand to deliver the public with adequate facilities in the present, exceedingly competitive and continuously evolving environment, require changes. The changes that become necessary are often related to the application of information systems (IS).Furthermore, when administrations are met with changes, a change management (CM) process requirements to be put in place. CM theories that are presently obtainable to practitioners and academics are often self-contradictory; they typically lack experiential indication and are stayed by unopposed hypotheses concerning the nature of the modern CM. The aim of this paper is, consequently, to identify precarious success factors for CM in IS projects. In order to reach this purpose, a clarification of changes in public organizations and the nature of CM are obtainable. Following this, an outline of success factors for CM in IS projects are recognized based on the literature review. The paper also examines two IS projects and uses them to demonstrate success factors influencing CM in IS projects in Malaysia pubic organizations. An argument of the Study findings is provided, and the paper concludes with a presentation of the study's contributions and limitations as well as the stream of future research.**

Keyword: Change management; public organizations; information systems

1. INTRODUCTION

At present, public organizations are often confronted with the need to implement modifications to existing procedures. This need is often associated with transformation that takes place in general management and the implementation of information systems (IS) [1]; [2]; [3]; [4]. The literature provides numerous instances of failure of huge and complex IS projects [5;] [6], and in many cases, the reason for IS implementation failure is a lack of change management (CM) [7]. CM provides a solution to two major problems: how to plan better for the operation of changes and how to overawed employee resistance (Anderson & Anderson, 2001) to these variations. CM refers to a set of basic tools or constructions proposed to keep any change effort under control [8]. Traditionally, the theory of CM has been based on Study cases for business organizations. The prior studies on CM did not concentrate on the specific contextual characteristics of public organizations [9]. However, an interest in CM in public organizations has been noted. A recent study has questioned the fact that CM techniques for the private sector are applicable in the public organization context and have suggested that the differences between the public and private sector could play a significant role in this respect [10]. Roughly they include different environmental, organizational, and procedure connected factors. Several writers have

suggested that the specific context of public organizations may have consequences for CM, but there is slight empirical evidence concerning this issue. A recent literature review of Study on CM in the public sector by [11] found that most studies emphasize the content and context of change, instead of the implementation process. Furthermore, researchers accomplish that many educations did not address the outcomes or success of a change intervention. Ubiquitous information systems and the implementation of various kinds of changes related to IS adoption have become a challenge for public organizations [35] [11].

This study holds the promise that conducting Study among Malaysia public organizations should contribute to a greater understanding of the use of CM in IS projects and should help fill the gap in the existing body of knowledge. Considering the above limitations, the objective of this study is to identify the successful factor for CM in IS projects in Malaysia public organizations [45]. Especially in the context of IS projects, an explanation of CM is offered. A literature review is conducted with specific emphasis on Successful factor for CM. Next, two IS projects in public organizations in Malaysia are presented, the employment of CM in these projects is shown, and the Successful factor for those CM in the projects are identified, and a discussion of the Study findings is provided. This paper concludes with a presentation of the studys contributions and limitations, and the stream of future works that may arise.

2. LITERATURE REVIEW

The literature review toughly proposes that change is a predictable consequence of applying various projects [8]; [12]. A project is a temporary and unique group of activities with the beginning and end in time clearly mapped out and designed to accomplish defined goals. Although project management (PM) and CM are derived from different terminologies and different methodologies [19], they are, however, tightly linked and co-dependent. They also emphasize different sets of skills and competencies. It is accomplished through the application and integration of PM processes such as initiating, planning, executing, monitoring and controlling, and closing. PM is the disciplined application of knowledge, skills, tools and techniques to project activities to meet the project requirements [12].

CM is the process, tools, and techniques to manage the people-side of change to achieve the required business outcome. CM incorporates the organizational tools that can be utilized to help individuals make successful personal transitions resulting in the adoption and realization of change [13] CM contributes to the successful implementation of a wide variety of projects. Not only does project success utilize the traditional measures of project performance, but it is also associated with change management [14]. Both PM and CM support moving an organization from a current state through a transition state to a desired future state. PM focuses on the tasks to achieve the project requirements.

CM focuses on the people impacted by the change. CM in the context of PM can be examined from two perspectives. The first one describes changes occurring in the project itself, e.g., a change of a project goal or its scope. Each addition or deletion to project goals or to project scope is considered to be a change, whether it increases or decreases the project cost, schedule, or quality [43]. In PM context, CM may refer to a PM process wherein changes to the scope of a project are formally introduced and approved [44]. In this context, change management in a project is seen as a creation of procedures that enable the implementation and acceptance of changes to the project itself. The other perspective refers to changes which have to be implemented in public organizations before or during the implementation of IS projects, e.g., an introduction of a new IS will require changes to procedures or workflow. This paper focuses on CM in this very context, i.e., changes that result from the implementation of IS.

Public organizations' efforts relate to a successful IS and CM implementation, experiencing various conditions and are associated with a substantial risk of failure. The considerations of IS and CM implementation may be expressed as critical success factors [42]. Successful factor represents the limited number of areas of activity in which the achievement of satisfactory results will ensure the success of IS projects in public organizations, also businesses associated with CM. However, the processes through which the change in public organizations comes about are not described in detail in the literature [15]; [9]. The actual Study

work typically examines CM in IS projects in business organizations only. The authors of this paper, extensively searching the literature and could not find any essential studies regarding applying CM in IS projects in public organizations. This represents the need for studying how CM should be used in IS projects in public organizations and how it affects the success of these projects.

3. CHANGE MANAGEMENT IN INFORMATION SYSTEM PROJECTS

Change management is a process that helps organizations in the implementation of an appropriately planned change [16]. CM in the context of IS projects is understood as activities, processes, and methodologies that support employee understanding and organizational aspects during the IS projects. CM refers to all activities associated with the interaction of technology, processes, and people [17]. Academic Study has shown that it is not the technology that provides an organization with success [34], but the integration of technology into an organizational change management process [18]. This approach takes into account the importance of people in an organization [36].

A successful IS project requires, among other things, a human resource approach to improving the necessary employee skills and their engagement in the procedure of CM [19]. Moreover, IS project very often requires reorganization of processes in operation at this point of time. In turn, reorganization of processes is strictly connected with a need to implement the CM concept [18]. Some authors, who also consider public sector changes, point at the fact that these changes may not be more complicated than those in the private sector, but for sure they are different. It can even be stated that CM is a key to success of public organizations IS projects [20]. The literature on project success factors has been comparatively quiet about the role of change [21]. In addition, PMI, for example, which offers training on project management, does not account for changes brought along with the project [41]. Various practical reports, e.g., The Economist (2009) and PWC (2007), and academic studies suggest that practitioners recognize projects as a structured way to implement business changes [22]; [23]. Nonetheless, CM has continued to have a relatively small representation.

4. ACHIEVEMENT FACTORS FOR CHANGE MANAGEMENT IN INFORMATION SYSTEM PROJECTS

There are numerous writers' recitation Successful factor for CM [24; [25]; [26]. However, there are not too several telling Successful factor for CM in IS projects. For this study, the Successful factor for CM in IS projects has been identified based on the literature review (Table 1). The framework includes successful factor for CM, which are defined in the literature on CM, and only those that might refer to CM in IS projects have been selected [37]. Additional, Successful factor definite by specific authors have been analyzed, classified, and unified. The identification of these key factors also allows for calculating the influence of CM on IS project [40]. The authors state the statement that all factors are similarly significant and none of them has been listed.

Table 1: Critical success factors for change management in IS projects

The following paragraphs present a more comprehensive explanation of each of the Successful factor presented in Table 1. (Weber & Weber, 2001).

	Successful Factor	Definition
1	Top management service	Top management (formulated by the board of directors) converts policy into priorities, priorities, plans, and a shared vision for the future. It takes decisions that affect everyone in the organization and is solely responsible for the company's success or failure.
2	Recognize the change	Changing means were wanting, choosing and taking steps to do the right thing. You have to want it to do something.
3	Shared vision for change	A common view is what you and the other leaders as part of the company intend to build or accomplish. A mutual look is not enforced as an organizational rule by one or a few individuals.

4	Planning project	Project planning is a method for how a project is to be completed with specified stages and established resources within a specific timeframe.
5	Managerial activity	Management as a company. Like other human activities (such as writing, playing, eating, cooking, etc.), control is an activity where a manager fulfils the goals by directing the efforts of others.
6	Effective communication	Effective communication is characterized as verbal speech or other information relaying methods. There was a mistake. An example of successful communication is when the person to whom you speak actively listens, accepts and understands your message.
7	Organization Readiness to Deal Changes	As an organizational structure, readiness for change refers to the mutual willingness of leaders of organizations to change (change commitment) and to their collective capacity to do so (change efficiency). As a consequence, the implementation is more efficient.
8	Employs training	As an organizational framework, preparation for change Employee training is a curriculum designed to improve professional abilities, expertise, productivity and value development to perform that particular job even better. There was a mistake. Education improves the skills and helps an employee improve and the business expand overall.
9	Employs satisfaction	"Satisfaction of employees" is the term used to describe how workers are satisfied and fulfil their needs and desires at work. The key reason for employee satisfaction is that happy workers have to do the job and make the requisite effort.
10	Information flow	The flow of information is the knowledge movement between individuals and systems. Efficient and secure information flows are essential to decision-making, processes and communications efficiency. The following are common information flow forms.
11	Performance Measurement	Performance measurement is commonly characterized as routine performance and performance measurement that produces sound data on system output and effectiveness. Capital (human resources, energy for staff, funding) used for programs and services.

The following paragraphs present a more comprehensive explanation of each of the Successful factor shown in Table 1.

4.1 TOP MANAGEMENT SUPPORT

Top management support assistances express and found excellence strategies and objects, delivers resources and workout, supervises IS application at all levels of the organization, and evaluates and studies the approach in light of consequences realized [27]; [28].

4.2 RECOGNIZE THE CHANGE

Recognizing the alteration assistances comprehend what precisely will be different and whom the change will affect [25]. The difference wants to be defined obviously. The suitable identification of changes determines changes in the organization's procedures and the employee's tasks and responsibilities [39]. As a result, it sets a direction of organization's development.

4.3 SHARED VISION FOR CHANGE

Shared vision for variation is significant to direct the system change effort and to serve as a foundation from which precise strategies need to be established for arriving at a future end-state [28]. The change agents must ensure that the organizational stakeholders comprehend the vision of how the IS will be talented at transforming the organization. It is actually significant to have a clear idea and objects for organizational achievement, especially during times of increased uncertainty, such as a change [26]. It is also very significant to understand the present state of the organization that can be viewed as the platform from which the CM plan will launch [29].

4.4 PROJECT PLANNING

Planning a project as a change includes management human and other resources. A clearly

documented change management procedure helps make a map of the tasks and resources required [29].

4.5 MANAGERIAL ACTIVITY

The commitment of line managers to CM creates a situation that they classify with a change. They also achieve the time of their supporters accordingly, accounting for their involvement in change procedures in their assignments [27].

4.6 EFFECTIVE COMMUNICATION

Effective communication is crucial for practical CM. Without proper notification, the employees involved in the change process would not know what changes were made, what changes are being made, what changes should be made. Furthermore, the employees would not be conscious of their tasks related to the applied changes [38]. Collaborating communication has recurrently grown up and across the organization is essential to confirm that the momentum. Also, eagerness for change does not reduce over time [25]. Communication by top management is seen as powerful leverage in ahead promise and building consensus about the necessary change [30].

4.7 ORGANIZATION READINESS TO DEAL CHANGES

This issue reproduces employees' perceptions of the quantity to which an organization is prepared to make variations to recover performance [26]. Dealing with a change helps bring a better understanding of imminent changes by employees.

4.8 EMPLOYEES TRAINING

Employees' working out was acknowledged as necessary, but it is very separate in nature [27]. Employees' exercise is a transparent complaint of how to use the IS. After foremost training, employees will gain early involvement with the change, and as an important the originality will stand a consequence on them; they may validate better understanding and provision for organization and the thoughtful change [26].

4.9 EMPLOYEES SATISFACTION

Employees' approval is the precondition for positive change application linked with IS projects [37]. Satisfaction is not fully felt until the employees get used to a new IS. At the beginning, there is continuously a noticeable resistance to change [31]. Thanks to the exercise of employees, the confrontation can be rapidly overwhelmed. Furthermore, the improvement of info movement on changes reduces the resistance.

4.10 PERFORMANCE MEASUREMENT

Performance measurement is a critical issue for the success of IS projects [32]. Application development necessity is measured frequently for additional adequate and effective control. Through monitoring and feedback from the users, the performance of the change procedure can be studied and assessed to see whether it is achieving business goals and objectives.

5. STUDY METHODOLOGY

The objective of our study was to specify a successful factor for CM in IS projects in public organizations. In order to complete the purpose, various technical methods and techniques have been applied, especially a critical study of the literature and case studies as well as approaches of creative thinking and logical deduction.

To clarify the nature of CM and identify successful factor for CM in IS projects palys an important role. Besides that, a critical study of the literature, as well as approaches of creative thinking and rational deduction. In order to present the real-world measurement of CM in IS projects in public organizations, a case study approach has been applied. Semi-structured interviews of end-users and project team members were conducted, as well as shareable documentation related to IS projects management were analyzed for the case studies. We also used our extensive practical experience of IS projects and of CM in those projects to guide the study. The studies related to the IS projects in public organizations and successful factors for CM in those projects were conducted in recently. This involved IS projects in two Malaysia public organizations projects included development and implementation of integrated IS.

6. STUDY FINDINGS

Public administration in Malaysia, due to the territorial scope of its operations, is divided into public organizations at the state level embracing the whole of Malaysia and public organizations at local levels encompassing voivodeships (provinces) and districts. The case studies of IS

ISCTJournal ISCEA
International Supply Chain Technology Journal
ISSN 2380-1204

projects considered below refer to the state level, where the project management took place, and the local levels, where the two IS projects were implemented. The two similar projects, one successful and one not prosperous will be used to present the application of CM in IS projects. Information about each project was gathered by participation in those projects and conducting a series of semi-structured interviews. Table 2 shows that the two projects were alike in terms of scope and size, but CM was only used in project B. As a result, the outcomes of the projects were different. Project an ended only as a partial success. Although the IS was finally implemented, it was not fully used by end-users after 12 months. The completion of project A was also significantly delayed. Project B was entirely successful. The IS was implemented, and it is thoroughly used by its end-users.

Table 2: Project A and B – comparison of necessary variables

A and B basic comparison		
Features	Project A	Project B
Project type	Information System	Information System
Sector	Public administration	Public administration
Initial Schedule	12 months	18 months
Budget	Realistic	Realistic
Success Criteria	On-time budget, ERP	On-time, web budget IS
Number of the end-user	400	35000
Change management	No (Change were introducing ad hoc)	Yes
Project Result after 12 months	The software was made but not fully used after 12 months	The software was produced but fully used after 12 months

7. CONCEPTUAL FRAMEWORK

In this section this study demonstration the conceptual framework.

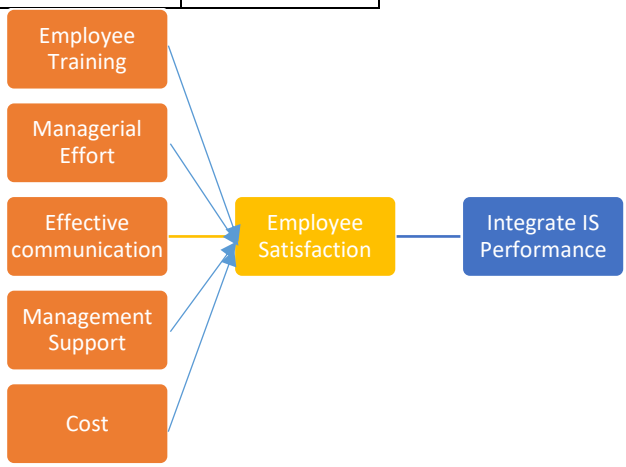

Figure 1. Conceptual framework

Items for Future Questionnaire

No	Variable	Items	Authors
1	Employee Training	Integrated IS has enough user manual for user	(Venkatesh et al., 2012)
		Company has enough facility to train employee	(Zhou & Wang, 2010).
		Integrated IS training is a unique facility to user	(Miraz et.al, 2020)
2	Managerial effort	The managerial effort is essential for me to	
		This is beneficial for industry enhancement	(Venkatesh et al., 2012)
		This is very important for performance	
3	Employee satisfaction	I am satisfied with the integrated IS system	(Miraz et.al, 2020; Zhou & Wang, 2010).)
		I found this useful to me	
		I am happy with the new system	

		It gives me complete satisfaction	
4	Management Support	My company offer this facility	(Miraz et.al, 2020)
		I see it is affordable to me	
		I see it support to our task	
		I see this is effective for the management	
5	Cost	This is worth the value	Zhou & Wang, 2010).
		This is affordable for public industry	
		This can create a sensation of its value	
		It's not costly to initiate in a company supply chain	
6	Effort Communication	I find enough information about IT and IS	(Venkatesh et al., 2012)
		Communication is a collective effort for the company	
		It will enhance the public industry supply chain	(Miraz et.al, 2020)
7	Integrated IS Performance	I think I need this to enhance public industry	
		I believe integrated IS performance useful to my work	(Venkatesh et al., 2012)
		This is effective for industry supply chain	(Venkatesh et al., 2012)
		This is very appropriate for public organization	(Miraz et.al, 2020; Zhou & Wang, 2010).

8. DISCUSSION

As stated, CM was not verified in project A, and the essential variations were implemented ad hoc, whereas CM was applied to project B in a methodologically correct manner. Based on the examination of the case studies, the authors can draw the same observations. Finally, IS was created and implemented with a significant delay. This study explored two projects, one positive and one not effective [33];[34]. The fact that the positive one implemented CM and the ineffective one did not, in itself is not proof that applying CM will assurance achievement. However, it is worth considering that performing CM can contribute to project success. The study was based on two case studies and the reports accessible by the project managers in both cases [35]. Though these sources mainly replicate individual views, it should be stated that project managers and whole project teams are valued sources of information on IS projects, also in terms of their success or disappointment. Successful factor analyzed in the paper are also measured as preconditions for CM success by other investigators [36]. This proves that the factors described in this paper may accurately reflect the state of practice of CM in IS projects. As the presented case studies showed, the application of CM bore an influence on the IS project success, though, it should be kept in mind that project success and CM success are different terms. Project success is measured in contradiction of a projects overall achievement of the project's objectives [37]. PM success is mostly based on budget, schedule, and requirements goals [33]. CM success reflects the implementation and acceptance of change by people. IS project success depends on two variables, namely. Sound project management and CM application. At the same time, it is worth emphasizing that CM mostly concentrations on social issues.

9. CONCLUSION

Though the recognized Successful factor for CM in IS schemes and its applied application is general and complete, a limitation of this study lies in the fact that it is founded on only two case studies, which examines only Malaysia public organizations. The replication of this study for a more significant number of IS projects in public organizations in Malaysia will be useful to enrich the body of knowledge related to the factors bearing an impact on CM in IS projects.

This study contributes to the Study of CM in IS projects in two ways. Firstly, the identification of Successful factor for CM in IS project. Secondly, it presented applied issues concerning that identified Successful factor and, consequently, the effect of CM on IS project success. This study suggested that the relation between CM and IS projects is one of the critical determinants of a successful IS project. On the one hand, the timely and effectively

managed an IS CM optimizes project. On the other, a change is an inevitable consequence of IS project implementations.

Additionally, this study can be useful for other Central and Eastern European countries as these countries are similar in many features. Their resemblance concerns their same geopolitical condition and their collective history, traditions, culture, and values. In addition, the similarity reflects in building democratic state structures and a free-market economy, participating in the European integration process, the levels of information systems application in public organizations. Also, they have to resolve the same difficulties and overcome the same political, economic, social, and technological obstacles in their transition from a traditional government to a government based on info systems.

REFERENCES

[1]Boyne, G. A., Farrell, C., Law, J., Powell, M., & Walker, R. M. (2003). *Evaluating public management reform.* Buckingham: Open University Press.

[2]Miraz, M.H., Habib, M., & Molla, M.S. (2016). An Overview of Information Technology Tools Implementation in Supply Chain Management", IETI Transactions on Computers, Vol. 2, No. 2, 2016, pp. 110-117, ISSN: 2414-1429.

[3]Kickert, W. J. M. (2007). Public management reforms in countries with a Napoleonic state model: France, Italy and Spain. In C. Pollitt, S. van Thiel, & V. Homburg (Eds.), *The new public management in Europe: Adaptation and alternatives* (pp. 26-51). Houndmills: Palgrave Macmillan.

[4]Miraz, M.H., & Habib, M. (2016). ICT Adoption in Small and Medium Enterprises: An Empirical Evidence of Service Sectors in Bangladesh, Journal of Economics, Business and Management (JOEBM), Vol.4, No. 8, August 2016, pp. 482- 485, ISSN: 2301-3567, DOI: 10.18178/joebm.2016.4.8.439.

[5]Ongaro, E. (2010). *Public management reform and modernization: Trajectories of administrative change in Italy, France, Greece, Portugal and Spain.* Northampton: Edward Elgar Publishing.

[6]Pollitt, C., & Bouckaert, G. (2011). *Public management reform: A comparative analysis-new public management, governance, and the Neo-Weberian state*. Oxford: Oxford University Press.

[7]Goldfinch, S. (2007). Pessimism, computer failure, and information systems development in the public sector. *Public Administration Review, 67*(5), 917-929.

[8]Loukis, E., & Charalabidis, Y. (2011). Why do eGovernment projects fail? Risk factors of large information systems projects in the Greek public sector: An international comparison. *International Journal of Electronic Government Research, 7*(2), 59-77.

[9]Aladwani, A. M. (2001). Change management strategies for successful ERP implementation. *Business Process Management Journal*, *7*(3), 266-75.

[10]Hornstein, H. A. (2014). The integration of project management and organizational change management is now a necessity. *International Journal of Project Management*.

[11]Miraz, M.H., Hassan, M.G., & Sharif, K.I. M. (2018). The relationship between personal and organizational in supply chain integration: Case study in Malaysia, Journal of business management and economic research (JOBMER), 2 (7), 42-47, 2018.

[12]Kuipers, B. S., Higgs, M., Kickert, W. J. M., Tummers, L., Grandia, J., & Van der Voet, J. (2014). Managing change in public organizations: A review of

the literature between 2000-2010. *Public Administration, 92*(1), 1-20.

[13]Kickert, W. J. M. (2013). Specificity of change management in public organizations: Conditions for successful organizational change in Dutch ministerial departments. *The American Review of Public Administration.*

[14]Jääskeläinen, A., & Sillanpää, V. (2013). Overcoming challenges in the implementation of performance measurement. *The International Journal of Public Sector Management, 26*(6), 440-454.

[15]Serra, C. E. M., & Kunc, M. (2014). Benefits realisation management and its influence on project success and on the execution of business strategies. *International Journal of Project Management*, *33*(1), 53-66.

[16]By, R. T. (2005). Organisational change management: A critical review. *Journal of Change Management*,*5*(4), 369-380.

[17]Miraz, M.H., Habib, M., & Saleheen, F. (2017). ICT-Based Business Initiatives for Women: An Outline of Best Practices in E-Commerce/E-Retailing Ventures, Frontiers in Management Research, ISSN: 2519-9587 (Online), 2519-9579 (Print), Vol. 1, No.1, January 2017, DOI:10.22606/fmr.2017.11005.

[18]Miraz, M.H., Majumder, M.I., Chowdhury, A.Y., & Habib, M. (2017). Use A Study on Sustainable Supply Chain Governance for Successful Investment", The International Supply Chain Technology Journal (ISCT), Vol. 4, No. 6, June 2018, ISSN: 2380-1204 (Online), 2380-5730 (Print), DOI#: 10.20545/isctj.v4i06.167.

[19]Crawford, L., Aitken, A., & Hassner-Nahmias, A. (2014). *Project management and organizational change*.Pennsylvania: Project Management Institute.

[20]Kickert, W. J. M. (2010). Managing emergent and complex change: The case of the Dutch agencification. *International Review of Administrative Sciences*, *76*(3), 489-515.

[21]Tan, V., & Tan, N. T. (2005). Change management in times of economic uncertainty. *Singapore ManagementReview*, *27*(1), 49-68.

[22] Miraz, M.H., Hye A.K. M., Wahab, M. K, Alkurtehe, K. A. M., Majumder, M. I., Habib, M., & Alsabahi, M. A. (2019). Electronics Product Promotion and SCM, Contemporary Research on Bangladesh, International Supply Chain Technology Journal, 6(1). DOI: doi.org/10.20545/isctj.v06.i01.02.

[21] Ramli, R., Miraz, M.H., Ku-Mahamud, K., Omar, M.F., & Kayat, K., (2019). Collaborative-Based Web Recommender System for Homestay Program: A Bridging Tool in a Tourism Supply Chain, International Journal of Supply Chain Management (IJSCM), 8(6) 978-982.

[22]Hornstein, H. A. (2014). The integration of project management and organizational change management is now a necessity. *International Journal of Project Management*.

[22]Higgins, J. (2005). Change management is key to public sector IT success. *Computer Weekly*, *8/30/2005*,33.

[23]Miraz, M.H., & Habib, M. (2016). An Integrated ICT Management Framework for Commercial Banking Organizations in Bangladesh, IETI Transactions on Sciences, Vol.1, No. 1, 2016, pp.18-29, ISSN: 2518-3974.

[24] Miraz, M.H., Hye, A.K. M., Alkurtehe, K A M., Alsabahi, M. A., Alam, M. M., Wahab, M. K., & Habib, M. (2019). Blockchain Securities to Construct Inclusive, Digital Economy Globally, International Supply Chain

Technology Journal, 6(1). DOI: doi.org/10.20545/isctj.v06.i01.02.

[25] Miraz, M.H., Hassan, M.G., & Sharif, K.I. M. (2019). *Blockchain Technology Implementation in Malaysian Retail Market*. Journal of Advanced Research in Dynamical and Control Systems. 11(5) 991-994.

[26]Kerzner, H. (2013). *Project management: A systems approach to planning, scheduling, and controlling*(11th ed.). Hoboken: John Wiley & Sons.

[27]Miraz, M.H., Majumder, I., Chowdhury A H M. Y., & Habib, M. (2018). A Study on Sustainable Supply Chain Governance for Successful Investment, ISCT Journal, DOI: https://doi.org/10.20545/isctj.v4i06.167.

[28] Miraz, M.H., Hassan, M.G., & Sharif, K.I.M (2019). Factors Affecting Implementation of Blockchain in Retail Market in Malaysia, International Journal of Supply Chain Management (IJSCM), 9(1).

[29] Miraz, M.H., Hassan, M.G., & Sharif, K.I.M. (2020). Factors Affecting Implementation of Blockchain in Retail Market in Malaysia, International Journal of Supply Chain. Management, 9 (1) 385-391.

[30] Hye, A.K.M., Miraz, M.H., Hassan, M.G., & Sharif, K.I.M (2020). Factors Affecting on E-Logistic: Mediating Role of ICT & Technology Integration in Retail Supply Chain in Malaysia, *Test Engineering & Management*, 82(3234- 3243), *ISSN: 0193-4120. The Mattingley Publishing Co., Inc*.

[31] Miraz, M.H., Hye, A.K.M., & Habib, M. (2019). The Impact of Blockchain-Bitcoin in Malaysian Markets, International Journal of Supply Chain 14 Management (IJSCM), Vol. 8, No. 5, ISSN: 2050-7399.

[32]Cocks, G. (2014). Optimising pathways for an organisational change management programme. *The TQM Journal, 26*(1), 88-97.

[33] Hye, A.K.M., Miraz, M.H., Hassan, M.G., & Sharif, K.I.M (2019). Factors Affecting on e-Logistic adoption on Supply Chain Management, an empirical evidence in logistic supply chain, International Journal of Scientific & Technology Research (IJSTR).

[34] Miraz, M.H., Hassan, M.G., & Sharif, K.I.M (2020). Trust Impact on Blockchain & Bitcoin Monetary Transaction, Jour of Adv Research in Dynamical & Control Systems, Vol. 12, 03-Special Issue.

[35] Miraz, M.H., Hassan, M.G., Sharif, K.I.M., & Hasan, M.T. (2020). Factors Affecting e-logistics in Malaysia: TheMediating Role of Trust, Jour of Adv Research in Dynamical & Control Systems, Vol. 12, 03-Special Issue, 2020.

[36] Miraz, M.H., Hye, A.K. M., Alkurtehe, K A M., Habib, M., Ahmed, M. S., Molla, M S.,Hasan, M T. (2019). The Effect of Blockchain in Transportation Malaysia, International Supply Chain Technology Journal, 6(1). DOI: doi.org/10.20545/isctj.v06.i01.02.

[37] Abdullah, S.Z., Miraz, M.H., Yibin, L., Abdullah, S. A., Salwa., T. (2019). Conceptual Framework of Integrative Logistics in Supply Chain Management for Maritime Port Logistics Chain Conference Proceedings, North American Academic Research, 2(5), 139-146.

[38]Mahadi Hasan Miraz, Razamin Raml, Ku Ruhana Ku-Mahamud, Abu Raihan Bhuiyan Albarune & Foazul Islam.(2015). ICT Applications on Homestay Malaysia International Journal of Networking and Computer Application, July 15-16, 2015, IEEE, ISBN:9788193137314**.**

[39]Saleheen, F., Miraz, M.H., Ramli, R. (2014). IT Operations in Retail

Banking: A Case Study, Journal of Applied Management and Investments (Scoups) 2014, vol. 3, issue 4, pp. 245-250.

[40]Saleheen, F., Miraz, M..H., Habib, Dr. Md. Mamun., Hanafi, Dr. Zurina. (2014). Challenges of Warehouse Operations: A Case Study in Retail Supermarket, International Journal of Supply Chain Management (IJSCM) (Scopus), 2014, vol.3, no.4, pp 63-67.

[41] Miraz, M.H., Hassan, M.G., & Sharif, K.I. M. (2019). *The Numerous Tactical Plans Affect Customer and Postal Service Relationship: The Mediating Role of Blockchain, An Empirical Study in Bangladesh*. Journal of Dynamical and Control Systems,11(5) 985-990.

[42]Ramli, R., Miraz, M.H., & Ku-Mahamud, K. (2017). Collaborative web recommender framework for homestay programs" Journal of Engineering and Applied Sciences, 12 (6) 1575-1581, 2017. SCOPUS.

[43]Miraz, M.H., Majumder, M.I., & Habib, M. (2017). The Influence of IT and Learning on Organizational Performance in Small Industries, Frontiers in Management Research, ISSN: 2519-9587 (Online), 2519-9579 (Print), Vol. 1, No.1, January 2017, DOI:10.22606/fmr.2017.11002.

[44]Miraz, M.H., & Habib, M. (2016). Effect of Information Technology in the Automotive Supply Chain, Open Journal of Advances in Business & Management (OJABM), Vol.1, No.1, June 2016, pp. 40-49, ISSN: 2456-2858.

[45]Molla, M.S., Miraz, M.H., & Habib, M. (2016). A Critical Review of Relationship between Corporate Governance and Firm Performance: In Malaysian Perspective", Open Journal of Advances in Business & Management (OJABM), Vol. 1, No.1, June 2016, pp. 31-39, ISSN: 2456-2858.