Knowledge Management Infrastructure:Preliminary Evidencesof Malaysian Banking Practice

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ABSTRACT

Knowledge Management (KM) has become a vital concept for Malaysian banking industries in enhancing their competitive advantage. Leveraging the power of knowledge occurs when individuals intended to share their knowledge. When there is a trust and secure feeling of ownership, the knowledge will spread without any constraints. With an adequate infrastructure in organizations, it can ease the communication and employees interaction for knowledge sharing. The purpose of this research is to investigate the impact of infrastructure, organizational culture, organizational structure and technology towards knowledge sharing in banking industries.

Keywords: infrastructure, knowledge sharing, banking.

I INTRODUCTION

Nowadays, organizations have realized the importance of knowledge as an intangible and valuable asset for organization. However, the challenge is to transfer the expert's knowledge for problem solving and decision making. Transferring the right knowledge to the right person at the right time could enhance the organization competitiveness.

The knowledge is not widely spread because of immature knowledge sharing mechanism and lack of sufficient infrastructure. This information and knowledge are unattainable by whom seeking for it. Encouraging knowledge sharing throughout the organization and establishing proper infrastructure seems to be the solution. Appropriate organizational structure and culture also can increase interaction and trust among employees and consequently enhance knowledge sharing.

II KM INFRASTRUCTURE IN BANKING

Heath (2003) revealed that KM is not entirely about managing knowledge; it is also about managerial, cultural and technical infrastructure that needs to be considered for a successful KM implementation. The term of KM infrastructure refers as KM enablers by some authors. However, Ho(2009)differentiate the term based on functionality where infrastructure is more towards working environment and enablers is a process of building the working environment. A KM infrastructure term is used throughout this paper. Table 1 shows the list of KM infrastructure according to various researchers.

Table 1: KM Infrastructure

Authors	KM Infrastructure
Pan &Scarbrough(1998)	Infrastructure, InfoStructure, InfoCulture
Gold et al. (2001)	Technology, Structure, Culture
Kim &Lee (2004)	Culture, Structure, Information Technology
Yeh, et al. (2006)	Corporate Culture, People, Information Technology, Strategy and leadership
Lee & Lee (2007)	People, Structure, Culture, Information Technology
Zaim et al. (2007)	Technology, Organizational Culture, Organizational Structure, Intellectual Capital
Aulawi, et al. (2009)	Culture, Structure, People, Information Technology

Ho (2009)	Information Technology, Culture, Evaluation, Strategy & Leadership
Mills and Smith (2011)	Technology Infrastructure, Organizational Culture, Organizational Structure

According to Table 1, there are three factors that exist in most references and considered as relevant to this study. These are organizational culture, organizational structure and information technology. Some authors such as Yeh, et al. (2006) and Ho (2009) use different term to explain the factors of KM infrastructure which is 'Strategy and Leadership' to represent the 'Organizational Structure'. These factors are briefly described in detail in the next sub-section.

1) Organizational Culture

According to McShane& Von Glinow (2003), organizational culture (corporate culture) is formed bysharing of employees cognitive and behavior towards certain problems. Schein (2004) revealed that organizational culture is a "pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration" (p.17).

Schein (2004) proposed that organization culture should be recognized as an important factor that could enhance organization effectiveness and success. Factors creating the culture can be divided into knowledge oriented and work oriented factors (Zheng, 2009). The culture is formed when the employees practice the appropriate action in their work routines (Moh'dAl-adaileh, 2011).The elements of culture include trust, team oriented work, and knowledge sharing (Park, et al., 2004). However, most of the researchers believed that trust and collaboration in the organization could be considered as the important elements for knowledge sharing (Aulawi, et al., 2009; Davenport & Prusak, 1998; Kim & Lee, 2004; Park, et al., 2004). Encouraging trust among employees could promote shared value and goals of the organization. It is beneficial for the organization to achieve their target and have the collective goals without ignoring the employees' ideas and self-interest. It leads the communities to increase their collaboration within organization (Cohen & Prusak, 2001).Finally, social network relates to a degree of contact and accessibility among employees also important to create organization culture. If they have a close relationship, the chances to share the knowledge is higher (Chow & Chan, 2008).

It is identified that the most important elements of the cultural dimension which influences knowledge sharing are trust, social networks, vision and goals.

2) Organizational Structure

Organizational structure is important in encouraging knowledge sharing among employees (Grover & Davenport, 2001). Organizational structure, comprises of formal division of work roles is purposely to organize work activities (Abdul Ghani, et al.,2002). There two different perspectives of structure, these are centralization of authority and formalization of tasks (Andrews & Kacmar, 2001; Chen & Huang, 2007; Gholipour et al., 2010; Pertusa-Ortega et al., 2010; Zmud, 1982)

The difference between centralization and formalization is the approach of managing the organization. Centralization is highly concentrated at management authority whereas formalization refers to standard operating procedures in making decision (Caruana, et al., 1998;Fredrickson, 1986).Both of centralization and formalization have advantages and disadvantages in organization. It depends on organizational goals and objectives such as centralization help to coordinate organization activities. The consequences are decreases of employees' flexibility.

People are reluctant to share the idea, so motivating them with some rewards could help setting up an effective knowledge sharing culture. Kim & Lee (2004) suggested there is a need of sufficient reward system to measure the employees' performance. It is an important structural element and has a huge influence to improve knowledge sharing in organization.

Hence, centralization, formalization and reward system are the elements of the organizational structure in this research.

3) Information Technology

There are evidences that Information and Communication Technology (ICT)can improve knowledge sharing in organization (Alavi & Leidner, 2001; Bock & Kim, 2001). ICT helps in removing the distance barriers and facilitates the

knowledge retrieval (Hendriks, 1999). The technology could manage organizational knowledge by supporting the process of creation, transfer and share knowledge.

The impact of information technology towards knowledge sharing is through hardware and software. The hardware and software use to collect, organize, store and share the knowledge in a useful way. However, the existence of technology cannot guarantee that employees be interested to engage with them. Employees may refuse because of lack of user-friendliness and proper training on certain application. Goodman (2007) believes that "IT and other KM resources and initiatives need to be user-friendly and underpinned by ongoing training and support" (p.7). It is important to focus on user-friendliness in this research. Figure 1 shows the conceptual framework of this study.

Figure 1:KM infrastructure conceptual framework

III RESEARCH METHOD

A survey was conducted to identify the employee's awareness of KM infrastructure towards knowledge sharing. This questionnaire is based on a previous work of Kim and Lee (2006); investigate the impact of organizational context and information technology on employee knowledge sharing capabilities in South Korean public and private organizations. Questionnaire has been sent through email based on the mailing list in yellow pages. However, due to low response rate, the questionnaire is been distributed by hand to a few bank branches in Kuala Lumpur and Cyberjaya, Malaysia. Finally, a total of 66 responses have been collected for this study. Based on the KM infrastructure conceptual framework in Figure 1, a list of variables has been identified for significant relationship with knowledge sharing. During data analysis, eight (8) hypotheses to examine the empirical evidence of this study are being tested. These hypotheses are:

H1: Clear awareness of organizational goals and objectives and also existence of a shared vision between employees, has significant affect on knowledge sharing.

H2: Increasing trust between employees has significant effect on level of knowledge sharing in organization.

H3: The level of social networking, formal and informal communication between employees has effect on knowledge sharing in organization.

H4: The degree of centralization in organization affects knowledge sharing between employees.

H5: The degree of formalization in organization affects knowledge sharing between employees.

H6: Existence of organized performance-based reward system in organization can motivates employees to share their knowledge and experiences.

H7:Existence of proper IT applications and software, promote level of knowledge sharing in organization.

H8: The level of user-friendliness of IT systems and applications, affect employees' knowledge sharing positively.

By using Statistical package for Social Sciences 16.0 (SPSS), the data analysis is divided into three parts. The analyses are demographic analysis, Cronbach's Alpha for reliability, Pearson correlation and regression for proving the hypotheses assumption.

IV FINDINGS

The findings from 66 respondents show a significant contribution of this research. The respondents consist of majority male respondents (61%) are giving their feedback in this study. The highest age distributions of respondents are from 36 to 40 (32%). Most of them are in the executive position with 59%. About 58% of the respondents have experience in the current position less than 10 years.

The goal of this research was to identify the KM infrastructure factors which impact on knowledge sharing. Data gathered from respondents has been statistically tested. Correlation test revealed that, correlation among all the variables are positive. On the other hand, all variables are in a significant correlation with dependent variable (Knowledge sharing). Afterward, via regression test, coefficients of all the predictor variables have been gained. The p-value for two variables of IT Applications and Vision and goals were more than 0.05 so they cannot contribute in equation (relationship) between independent variables and knowledge sharing, but p-value for other variables were less than 0.05 that shows these predictors variable can be used in regression equation.

Finally according to regression test results of this study, there is no significant relationship between knowledge sharing and two variables. These variables are 'Vision and goals' and 'IT applications'. So, hypotheses 1 and 7 cannot be supported by the obtained results, but other hypotheses are significantly supported.

The results of KM infrastructural factors affecting knowledge sharing in Malaysian banking organizations are:

- Social networks

  Supported by Tsai (2002); Connelly&Kelloway (2003); Kim & Lee (2006); Al-Alawi, et al. (2007);Moh'd Al-adaileh (2011).

- Reward systems

  Supported by Al-Adaileh&Al-Atawi (2011);Chay, et al. (2007); Kim and Lee (2006); Al-Alawi, et al. (2007).

- Trust

  Supported by Willem &Buelens (2007);Holste& Fields (2010); Ismail &Yusof(2010).

- User-friendliness of IT systems

  Supported by Jarvenpaa&Staples (2000); Kim & Lee (2006); Hsu& Lin (2008).

These are significant variables that affect employee's knowledge sharing capabilities positively in Malaysian banking organizations. Centralization and formalization also are significant but in negative direction (Tsai (2002); Chen &Huang (2007); Willem & Buelens (2007).

The level of importance of each factor can be recognized through the coefficient analysis of regression test. It shows that the highest coefficient is a social networks (β=0.798), following by reward systems and the level of trust among employees. All the contributing factors in this research are been rank in Table 2, based on the results of coefficient analysis of this study.

Table 2: Level of importance of the factors according to findings of this research

Rank	**Factor**	**Coefficient (β)**
1	Social Networks	0.798
2	Reward Systems	0.646
3	Trust	0.304
4	User-friendliness of IT system	0.238
5	Declining formalization (- Formalization)	0.094
6	Decentralization (- Centralization)	0.054

The study reveals the relationship between identified KM infrastructure and knowledge sharing. According to results of regression test and the model of relationship between the influencing factors and knowledge sharing; an equation is presented as below:

Knowledge Sharing (in Malaysian banking organizations) = 0.798 (Social networks) + 0.646 (Reward systems) +0.304 (Trust) + 0.238 (User-friendliness) - 0.094 (Formalization)-0.054 (Centralization)

The numbers in the above equation is by regression coefficients (β) test and reveal that, if one of the independent variable increases as much as one unit, and other predictor variables remain unchanged, knowledge sharing capability will increase as much as respective coefficients.

V IMPLICATION

This research provides new evidence of the current situation of knowledge sharing in Malaysian organizations particularly in the banking industry.

The findings of this study can assist the banking organizations in better recognizing and understanding the contributing factors which impact knowledge sharing between banks' employees. It can help banks' management to implement an effective knowledge sharing system. Hopefully, these findings can assist in developing more strategies for knowledge-sharing success in the future.

VI CONCLUSION

The results of this research show that the organizational culture, organizational structure and information technology, are the significant factors affecting knowledge sharing among employees in Malaysian banking industries. This research shows that the organization should emphasize the elements of this factors which are social networks, reward systems, interpersonal trust, user-friendly application, centralization and formalization of structure. It is important to get a support from top management in organization. Hence, organizational managers and leaders must fully understand about the need of knowledge sharing in organization and commit to provide proper changes to facilitate knowledge sharing in organizations.

This research shows that social networks are the most important factor which impacting knowledge sharing. Hence, it is strongly recommend that organizational leaders attempt to promote formal and informal communities and knowledge oriented practices in the organizations for employees to be able to interact and share expertise. This strategy also can help to reinforce trust between employees. The results of this research strongly emphasize on the importance of organizational reward systems for knowledge sharing mechanism success in Malaysian banking organizations.

Based on this research's findings, high centralization and formalization are two factors that negatively affect knowledge sharing among banks' employees in Malaysia. Centralization and formalization will increase top-down control and reduce informal interaction. This situation can create an environment of fear and distrust which can decline collaboration and integrative actions in organizations. Since some level of centralization and formalization in any organization is inevitable and even necessary, organizational leaders have defined an appropriate level of centralization and formalization. It has to fulfill organizational culture and objectives to minimize their negative effects on knowledge sharing among employees.

Finally, it seems that, the most important point to promote knowledge sharing in any organization is making knowledge sharing as a pervasive culture for the entire organization. These cultural changes must begin from the senior management and then should be embedded and institutionalized in the whole organization through some regular education, training and mentoring programs. For achieving this goal; strong relationship between top management and employees seems to be important synergetic factor.

As conclusion, these infrastructures have significant factors contributing to this research. Nevertheless further researches are required to validate and support the findings of this study.

REFERENCES

Abdul Ghani, K., Jayabalan, V., &Sugumar, M. (2002). Impact of advanced manufacturing technology on organizational structure. The Journal of High Technology Management Research, 13(2), 157-175.

Al-Adaileh, R. M., &Al-Atawi, M. S. (2011). Organizational culture impact on knowledge exchange: Saudi Telecom context. Journal of Knowledge Management, 15(2), 212-230.

Al-Alawi, A. I., Al-Marzooqi, N. Y., & Mohammed, Y. F. (2007). Organizational culture and knowledge sharing: critical success factors. Journal of Knowledge Management, 11(2), 22-42.

Alavi, M., &Leidner, D. E. (2001). Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. MIS Quarterly, 25(1), 107-136.

Andrews, M. C., &Kacmar, K. M. (2001). Discriminating among organizational politics, justice, and support. Journal of Organizational Behavior, 22(4), 347-366.

Aulawi, H., Sudirman, I., Suryadi, K., &Govindaraju, R. (2009). Literature Review Towards Knowledge Enablers Which Is AssumedSignificantly Influences Ks Behavior. Journal of Applied Sciences Research, 5(12), 2262-2270.

Bock, G. W., & Kim, Y. G. (2001). Breaking the myths of rewards: An exploratory study of attitudes about knowledge sharing. Information Resource Management Journal, 15(2), 14-21.

Caruana, A., Morris, M. H., &Vella, A. J. (1998). The effect of centralization and formalization on entrepreneurship in export firms. Journal of Small Business Management, 36(1), 16-29.

Chay, Y. W., Menkhoff, T., Loh, B., & Evers, H. D. (2007). Social capital and knowledge sharing in knowledge-based organizations: An empirical study. International Journal of Knowledge Management (IJKM), 3(1), 29-48.

Chen, C.-J., & Huang, J.-W. (2007). How organizational climate and structure affect knowledge management--The social interaction perspective. International Journal of Information Management, 27(2), 104-118.

Cohen, D. and Prusak, L. (2001) In Good Company. How social capital makes organizations work, Boston: Harvard Business School Press.

Chow, W.S. & Chan, L.S (2008), Social network, social trust and shared goals in organizational knowledge sharing, Information & Management,4(7),458-46.

Connelly, C. E., &Kelloway, E. K. (2003). Predictors of employees' perceptions of knowledge sharing cultures. Leadership & Organization Development Journal, 24(5), 294-301.

Davenport, T. H., &Prusak, L. (1998). Working knowledge: How organizations manage what they know: Harvard Business Press.

Fredrickson, J. W. (1986). The strategic decision process and organizational structure. Academy of Management Review, 11(2), 280-297.

Gholipour, R., Jandaghi, G., &Hosseinzadeh, S. A. A. (2010). Explanation of knowledge management enabler as a latent variable: A case study of SMEs in Iran. Afr. J. Bus. Manage, 4(9), 1863-1872.

Goodman, J. (2007). Developing a KM Culture (illustrated ed.): Ark Group

Grover, V., & Davenport, T. H. (2001). General perspectives on knowledge management: Fostering a research agenda. Journal of Management Information Systems, 18(1), 5-21.

Heath, J. (2003). Harvesting and using corporate knowledge. Work Study, 52(4), 184-189.

Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. Knowledge and process management, 6(2), 91-100.

Ho, C. T. (2009). The relationship between knowledge management enablers and performance. Industrial Management & Data Systems, 109(1), 98-117.

Holste, J. S., & Fields, D. (2010). Trust and tacit knowledge sharing and use. Journal of Knowledge Management, 14(1), 128-140.

Hsu, C. L., & Lin, J. C. C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. Information & Management, 45(1), 65-74.

Ismail, M. B., &Yusof, Z. M. (2010). The Impact of Individual Factors on Knowledge Sharing Quality. Journal of Organizational Knowledge Management, 2010.

Jarvenpaa, S. L., & Staples, D. S. (2000). The use of collaborative electronic media for information sharing: an exploratory study of determinants. The Journal of Strategic Information Systems, 9(2-3), 129-154.

Kim, S., & Lee, H. (2004). Organizational factors affecting knowledge sharing capabilities in e-government: An empirical study Knowledge Management in Electronic Government, Proceedings (Vol. 3025, pp. 265-277). Berlin: Springer-Verlag Berlin.

Kim, S., & Lee, H. (2006). The Impact of Organizational Context and Information Technology on Employee Knowledge-Sharing Capabilities. Public Administration Review, 66(3).

Lee, Y.-C., & Lee, S.-K. (2007). Capabilities, processes, and performance of knowledge management: A structural approach. Human Factors and Ergonomics in Manufacturing & Service Industries, 17(1), 21-41.

McShane, S. L., & Von Glinow, M. A. Y. (2003). Organizational behavior: Emerging realities for the workplace revolution. New York McGraw-Hill/Irwin.

Mills, A. M., & Smith, T. A. (2011). Knowledge management and organizational performance: a decomposed view. Journal of Knowledge Management, 15(1), 156-171.

Moh'd Al-adaileh, R. (2011). The Impact of Organizational Culture on Knowledge Sharing: The Context of Jordan's Phosphate Mines Company. International Research Journal of Finance and Economics(63), 216-228.

Pan, S. L., &Scarbrough, H. (1998). A socio-technical view of knowledge sharing at Buckman Laboratories. Journal of Knowledge Management, 2(1), 55-66.

Park, H., Ribiere, V., &Schulte Jr, W. D. (2004). Critical attributes of organizational culture that promote knowledge management technology implementation success. Journal of Knowledge Management, 8(3), 106-117.

Pertusa-Ortega, E. M., Zaragoza-Sez, P., &Claver-Cortés, E. (2010). Can formalization, complexity, and centralization influence knowledge performance? Journal of Business Research, 63(3), 310-320.

Schein., E. H. (2004). Organizational culture and leadership (3rd ed.). New York: John Wiley & Sons

Tsai, W. (2002). Social structure of" coopetition" within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing. Organization science, 13(2), 179-190.

Willem, A., &Buelens, M. (2007). Knowledge sharing in public sector organizations: The effect of organizational characteristics on interdepartmental knowledge sharing. Journal of public administration research and theory, 17(4), 581.

Yeh, Y. J., Lai, S. Q., & Ho, C. T. (2006). Knowledge management enablers: a case study. Industrial Management & Data Systems, 106(6), 793-810.

Zaim, H., Tatoglu, E., &Zaim, S. (2007). Performance of knowledge management practices: a causal analysis. Journal of Knowledge Management, 11(6), 54-67.

Zheng, W. (2009). The Knowledge-Inducing Culture—An Integrative Framework of Cultural Enablers of Knowledge Management. Journal of Information & Knowledge Management, 8(03), 213-227.

Zmud, R. W. (1982). Diffusion of modern software practices: influence of centralization and formalization. Management science, 28(12), 1421- 1431.