

Knowledge Management in Banking Sector and its Impact on Competitive Advantage: An Applied Study to Banks in Jeddah Saudi Arabia

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Summary

The current study aims at identifying the challenges of implementing knowledge management in the banking sector and determining the levels of competitive advantage in the banking sector in Jeddah - Kingdom of Saudi Arabia. The study also aims at identifying the contributions and added value associated with the implementation of knowledge management in attaining competitive advantage. The analytical descriptive approach was used as a research approach. To collect data, a questionnaire was distributed to achieve the research objectives. The study sample included 300 individuals working in the banking sector in Jeddah. Results of the study shows the impact knowledge management on the achievement and improvement of competitive advantage, on customer satisfaction, and on operational excellence.

Key words:

Knowledge management, competitive advantage, banking sector.

1. Introduction

In today's world, knowledge has a further role in power more than just a kind of information that needs to be known. It has exceeded this perimeter and is now considered as one of the most (if not the very most) effective factor in achieving success in today's highly competitive markets. Therefore, modern business organizations considered knowledge as its valuable strategic asset. As any other asset, knowledge requires wise management to be turned into effective and productive procedures and practices. This description can also be applied for financial institutions as well, especially those working in the banking industry. Those institutions are mainly relying on the interpretation and organization of data to create the necessary knowledge for managing operations and activities.

In general, creating a competitive advantage is one of the best means that any organization need to employ to put itself in a position of relative safety from fierce competition in the market. Creating a competitive advantage is based on providing of what cannot be provided by others.

Number of challenges are facing the creation of competitive advantage in the world of banking. Most of the

challenges are related to the development of employees' abilities and skills, as well as complexities related to the administrative development. Having a competitive advantage is highly depending on knowledge management, which, in turn, faces several other related obstacles, such as the lack of universally accepted theories and models that can be used as a basis for implementing knowledge management systems, in addition to the difficulty of maintaining information security in knowledge management systems [1,2].

In addition to those major challenges, there are various problems that are prevalent in banking institutions and make attaining competitive much more complex than an easily reachable goal. Most bank managers are intolerant toward mistakes committed by employees, which resulted in losing the benefits of learning from mistakes. Also, organizational culture in most banks is more leaning toward traditional approaches and lacks appropriate measures for empowering employees, which in turns make efforts to improve the bank's overall performance into something exclusive to senior managers. Furthermore, several organizations, including banks, are not making sufficient efforts to fulfill employee's learning needs. This resulted in neglecting the developments of employees' abilities and skills, which are of utmost importance in today's competitive markets [3].

The objectives of this research are to: (1) identify the challenges of implementing knowledge management in the banking sector in Jeddah - Saudi Arabia. (2) identify the levels of competitive advantage in the banking sector in Jeddah, and (3) to discover the existence of a correlational relationship between the challenges of knowledge management and owning a competitive advantage in the banking sector in Jeddah.

2. Literature Review

2.1 Knowledge Management

The roots of human knowledge go back to the beginning of human history on the planet. The importance of knowledge in human life has increased to the line that it has become an essential part of daily life and that the need to manage knowledge has become a critical component of activities in countless disciplines. This has led to the birth of the modern concept of "knowledge management" in the late 1980s [4]. The birth of knowledge management came as a result of the fact that the way humans are dealing with knowledge has evolved in significant ways over the centuries. Although the term "knowledge management" was coined in the late 1980s, it exploded in prevalence starting from the mid-1990s [5].

Knowledge management is a management system that is helpful in enabling the organization to increase and manage the knowledge it possesses by facilitating the movement and flow of information among individuals. It is an approach with which an organization treats knowledge as a strategic asset [6]. Regarding banking sector, knowledge management is particularly defined as the process through which a banking institution finds, gathers, acquires, and uses knowledge to support and improve its overall performance [7]. The success in carrying out this process is an indicator of the institution's success in the industry.

The process of shifting towards knowledge management in the banking sector is primarily based on the flow of vast amounts of information from different sources. Knowledge management is a main pillar of strategic management in modern banking sector [8]. In practice, knowledge management makes the transfer of data and information across the institution much easier. It facilitates the processes of collecting, classification, revision, and introduction of information in a format that is easy for an average person to use, comprehend, and share. The organizing of information in these steps makes the process of decision making based on it very efficient [9].

There are various requirements for implementing knowledge management in banking sector, the most important of which is the cultivation of an organizational culture that promotes flexible and transparent exchange of information among employees from all organizational levels [10]. In addition to the cultural organization, there are various competencies necessary for the effective implementation of knowledge management in banks. Knowledge management systems are hugely reliant of technological infrastructure [11]. This means that employees must be qualified enough in using technology.

Therefore, it's imperative that banks hold training workshops on implementing knowledge management [12]. There are several barriers making the practical application of knowledge management in the banking sector quite difficult, the most important of which is the difficulty in successfully determining the proper ways of turning the knowledge individuals possess into distributed and shared knowledge across the whole banking institution [13]. Furthermore, there are countless challenges coming from managers. Usually, bank managers face various restrictions (time, resources, etc.) hindering the integration of knowledge management into the organizational structures. Managers also place too much emphasis on administrative activities and often neglect the importance of sharing and managing knowledge [14]. To overcome the challenges of applying knowledge management, banks must integrate mechanisms in their organizational and administrative structures applications and systems that make it easier to share information among employees of different organizational levels [15]. This must be accompanied by adopting new administrative and organizational policies that promote collaborative practices among employees. Doing so ensures that employees from all organizational levels will share information to improve the bank's overall performance and productivity.

2.2 Competitive Advantage

Competitive advantage in the banking sector can be defined as the ability to make the organization superior to competitors, which depends on the quality of senior management decisions [16]. It is also, the bank's use of its existing resources to improve its performance and efficiency, and by using innovative approaches to gain competitive advantage [17]. There are various sources of competitive advantage in the banking sector, but the most important of which is the effective management of intangible assets, mainly the availability of information to the institution. Banks deal with large amounts of information that require effective and efficient organizing so that the management can convert it into productive management decisions. This necessitates for banks to employ information and communication technology (ICT) as an essential asset in managing the large amounts of data circulating every day. The domains in which ICT must be employed include managing knowledge sources, procedures, and communication. Consequently, a bank guarantees enjoying being more innovative than competitors and becoming more productive.

There are several types of competitive advantage, such as: cost advantage where the bank reduces the costs of activities and processes to gain financial advantages, and differentiation advantage which is created when customers notice a significant difference in the level quality of

services provided by the bank compared to competitors [18]. Differentiation advantage is generally considered as more crucial than the cost advantage because it's the one that is always expected by customers. At the same time, achieving it is considered as a complex challenge. Attaining differentiation advantage requires healthy cooperation among employees of all organizational levels [19]. Reaching competitive advantage in the banking sector leads to making banking institutions more effective and efficient and more able to add value for customers [20]. A bank with a competitive advantage is characterized by improved service delivery, which takes various forms, including introducing new incentives for making customers more willing to use banking services and providing information that is easy to understand, and thus ensures customer loyalty.

Knowledge Management systems contribute in attaining competitive advantage in the banking sector. As banks deeply rely on information, knowledge management has become an important means of maintaining a solid foothold in the market. Knowledge management systems make it easy for the right knowledge to reach the right person at the right time, thus enhancing the overall performance efficiency in banking institutions [21]. Furthermore, knowledge is the most important currency circulation in the banking industry. Enjoying a sustainable competitive advantage depends on the efficient use of knowledge management systems, as this directly results into increased speed of operations across the entire institution [5].

3. Developing Research Hypothesis

In the light of the above discussions, it appears that knowledge management is playing a great role in improving the overall performance of organizations in general, and particularly in the banking sector, and it also contributes in gaining competitive advantage. Banking sector in Jeddah is explored to show the impact of knowledge management on competitive advantage. This study intends to explore these issues by developing the following research hypothesis:

H1: Knowledge management has a significantly impact on achievement and improvement of competitive advantage.

H2: Innovation and quality of service through knowledge management achieves competitive advantage.

H3: Use of knowledge management and its impact on customer satisfaction.

H4: There is correlation between the implementation of knowledge management and operational excellence.

4. Research Methodology

A descriptive analytical research methodology was used. This methodology placed its focus on facts and data collection, and classification, which were geared at unveiling informed conclusions, and consequently can be generalized to the banking sector in Jeddah - Kingdom of Saudi Arabia. A simple random technique was used to choose the participants. The research sample was composed of 300 employees in the banking sector at Jeddah.

4.1 Sample

Sample participants have different academic qualification, number of training courses, and number of years of experience. Based on academic qualification, 60.7% of the sample participants have a bachelor degree, 26.0% have a master degree, and 13.3% have a PhD degree. Then, based on the number of training courses, 22.0% have no training course, 45.7% have less than 3 courses, and 32.3% have 3 or more courses. Lastly, based on the number of years of experience, 15.0% of the participants have less than 5 years, 19.0% have from 5 years to less than 10 years, 38.0% have from 10 years to less than 15 years, and 28.0% have 15 years of experience and more.

4.2 Data Collection Methods and Tools

A questionnaire was used as a data collection tool. It had two main parts namely: preliminary data about the respondents (academic qualifications, number of training courses, and the number of years of experience), and the second part composed of 32 items distributed among four 4 main axes. A five-dimensional Likert scales was used to determine the challenges of implementation of knowledge management and determine the levels of competitive advantage in the banking sector in Jeddah. It also aimed to determine the contributions and value added of implementation of knowledge management to achieve competitive advantage in the banking sector.

4.3 Results and Discussion

Following is the discussion of the hypothesis:

H1: Knowledge management has a significantly impact on achievement and improvement of competitive advantage.

For this hypothesis, arithmetic mean and standard deviation of each of the statements of the first axis: "the degree of knowledge management impact on achieving and improving competitive advantage", were calculated and then sorted in descending order based on the arithmetic average as shown in table 1.

H1 comes with a high score from the participants' point of view, with the overall mean of 4.13, and with the standard deviation (SD) of 0.717. Statements come with SD values between 0.760 and 1.04, which are low values, reflecting the homogeneity of responses to them.

The impact of knowledge management on the achievement and improvement of competitive advantage may be attributed to the respondents' belief in the importance of

implementing the principles of knowledge management at the bank and their contribution to the clear improvement in the performance and achievement of the objectives of senior management by increasing the competitive advantage of the bank, and achieving profits in a progressive manner if knowledge management is applied in a practical and scientific manner.

Table 1: Knowledge management significantly impact on the achievement and improvement of competitive advantage

Items	Responses						Mean	SD	Item Order	Response Score
	f	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
1 Knowledge management helps the bank management to constantly update its customers' data and information.	f	4	10	50	57	179	4.32	0.957	1	Very high
	%	1.3	3.2	16.7	19.0	59.0				
2 Knowledge management plays an important role in the preparation of periodic reports on the state of the market.	f	2	2	38	125	133	4.28	0.760	2	Very high
	%	0.7	0.7	12.7	41.7	44.3				
3 The use of knowledge management helps the bank's management focus on organizational resources in the face of competition challenges with other banks.	f	2	6	53	127	112	4.14	0.820	3	High
	%	0.7	2.0	17.7	42.3	37.3				
4 Knowledge management contributes to monitoring the financial capabilities of competing banks	f	8	8	51	104	129	4.13	0.966	4	High
	%	2.7	2.7	17.0	34.7	43.0				
5 Knowledge management assists the bank management in the study of competitors in achieving the competitive advantage of the bank.	f	4	16	56	91	133	4.11	0.977	5	High
	%	1.3	5.3	18.7	30.3	44.3				
6 The use of knowledge management increases the bank's ability to activate the appropriate security procedures for e-management at the bank.	f	4	4	80	91	121	4.07	0.917	6	High
	%	1.3	1.3	26.7	30.3	40.3				
7 Knowledge management assists the bank management in the comparison with its services provided with the services of competing banks	f	4	12	68	107	109	4.02	0.934	7	High
	%	1.3	4.0	22.7	35.7	36.3				
8 Knowledge management helps the bank management to create knowledge about customers of competing banks.	f	6	16	82	69	127	3.98	1.04	8	High
	%	2.0	5.3	27.3	23.0	42.3				
Overall mean and standard deviation							4.13	0.717		High

This result is consistent with the results of Huang et al . [11] study, which emphasized that there is a strong positive relationship between the integration of soft (human) and solid (knowledge) management networks and

the competitive advantage of Commercial companies and financial and banking institutions.

H2: Innovation and quality of service through knowledge management achieves competitive advantage.

For this hypothesis, arithmetic mean and standard deviation of each statements of the second axis: “quality of

service provided and innovation through knowledge management”, to achieve a competitive advantage, has been calculated and then sorted according to the arithmetic mean as shown in table 2.

Table 2: The provided innovation and quality of service through knowledge management achieves competitive advantage

Items		Responses					Mean	SD	Item Order	Response Score
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
1	f	8	10	63	67	152	4.15	1.03	1	High
	%	2.7	3.3	21.0	22.3	50.7				
2	f	4	4	75	84	133	4.13	0.924	2	High
	%	1.3	1.3	25.0	28.0	44.3				
3	f	4	8	75	74	139	4.12	0.964	3	High
	%	1.3	2.7	25.0	24.7	46.3				
4	f	8	12	60	79	141	4.11	1.03	4	High
	%	2.7	4.0	20.0	26.3	47.0				
5	f	5	9	65	100	121	4.08	0.942	5	High
	%	1.7	3.0	21.7	33.3	40.3				
6	f	5	20	64	83	128	4.03	1.02	6	High
	%	1.7	6.7	21.3	27.7	42.7				
7	f	4	12	76	93	115	8	0.959	7	High
	%	1.3	4.0	25.3	31.0	38.3				
8	f	6	23	71	75	125	3.97	1.06	8	High
	%	2.0	7.7	23.7	25.0	41.7				
Overall mean and standard deviation							4.07	0.85		High

H2 comes with a high score from the participants' point of view of the study sample members, with the overall mean 4.07, and with the standard deviation of 0.850. SD values of the second axis were between 0.924 and 1.06, which are low values, indicating the homogeneity of the opinions of the respondents on these statements.

This result is due to the fact that innovation and the quality of services provided helps bank employees to integrate and coordinate units and divisions.

This result is consistent with the results of previous studies, such as Rezaee & Jafari [20], which found that there is a strong positive relationship between the implementation of the knowledge management strategy, including quality of service provided, innovation and competitive advantage in banks.

H3: Use of knowledge management and its impact on customer satisfaction

For this hypothesis, arithmetic mean and standard deviation of each statements of the third axis: “use of knowledge management and its impact on customer satisfaction”, has been calculated and then sorted according to the arithmetic mean as shown in table 3.

Table 3: Use of knowledge management and its impact on customer satisfaction

Items	Responses						Mean	SD	Item Order	Response Score
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree				
1	f	14	11	42	87	146	4.13	1.08	1	High
	%	4.7	3.7	29.0	29.0	48.7				
2	f	5	9	67	91	128	4.09	0.956	2	High
	%	1.7	3.0	22.3	30.3	42.7				
3	f	8	20	55	74	143	4.08	1.07	3	High
	%	2.7	6.7	18.3	24.7	47.7				
4	f	14	16	49	74	147	4.08	1.13	4	High
	%	4.7	5.3	16.3	24.7	49.0				
5	f	19	16	47	59	159	4.08	1.21	5	High
	%	6.3	5.3	15.7	17.7	53.0				
6	f	17	22	56	53	152	4.00	1.22	6	High
	%	5.7	7.3	18.7	17.7	50.7				
7	f	20	20	53	63	144	3.97	1.23	7	High
	%	6.7	6.7	17.7	21.0	48.0				
8	f	30	22	49	60	139	3.85	1.34	8	High
	%	10.0	7.3	16.3	20.0	46.3				
Overall mean and standard deviation							4.04	1.014		High

H3 comes at a high score from the participants' point of view, with the overall mean of 4.04, and with the standard deviation of 1.014. SD values of the third axis were between 0.956 and 1.34, which are high values, indicating the divergence of views of the respondents on these statements.

The impact of knowledge management on customer satisfaction has a high degree of responsiveness; knowledge management may help to solve customer problems and interest in customer services and ways to improve them. The role of knowledge management is important in identifying the most important customers and facilitating their ongoing transactions.

This finding is consistent with the results of several previous studies, such as the Geretto & Pauluzzo [10] study, which found that the use of knowledge management mechanisms in banks is the fastest and most effective solution. The result is also consistent with the Taherparvar et al. study [17], which concluded that banks that focus on knowledge management acquire more modern and relevant

ideas, thereby enhancing their innovative capabilities and achieving high customer satisfaction.

H4: There is correlation between the implementation of knowledge management and operational excellence

For this hypothesis, arithmetic mean and standard deviation of each statements of the fourth axis: "correlation between the implementation of knowledge management and operational excellence", has been calculated and then sorted according to the arithmetic mean as shown in table 4.

Table 4: Correlation between the implementation of knowledge management and operational excellence

Items	Responses					Mean	SD	Item Order	Response Score	
	f	Strongly Disagree	Disagree	Neutral	Agree					Strongly Agree
1 Knowledge management contributes to providing incentives to employees in a manner that is commensurate with achieving operational excellence.	f	8	12	39	73	168	4.27	1.01	1	Very High
	%	2.7	4.0	13.0	24.3	56.0				
2 Knowledge management provides effective communication channels between employees to accelerate and improve work.	f	5	9	44	92	150	4.24	0.928	2	Very High
	%	1.7	3.0	14.7	30.7	50.0				
3 Knowledge management helps to update the information available to employees to enhance their operational excellence.	f	7	16	44	70	163	4.22	1.030	3	Very High
	%	2.3	5.3	14.7	23.3	54.3				
4 Knowledge management helps to open up internal relationships among the bank's departments to enhance operational excellence.	f	7	15	53	83	142	4.13	1.020	4	High
	%	2.3	5.0	17.7	27.7	47.3				
5 Knowledge management helps employees to use modern technology.	f	18	11	41	83	147	4.10	1.14	5	High
	%	6.0	3.7	13.7	27.7	49.0				
6 Knowledge management helps workers extract knowledge from their minds, thus achieving competitive advantage.	f	14	18	45	73	152	4.09	1.14	6	High
	%	4.7	6.0	15.0	24.3	50.0				
7 Knowledge management helps to share experiences among employees, improving the quality provided to customers and enhancing operational excellence.	f	7	13	62	99	119	4.03	0.994	7	High
	%	2.3	4.3	20.7	33.0	39.7				
8 Knowledge management helps to retrieve information to improve functionality.	f	19	12	69	63	137	3.96	1.19	8	High
	%	6.3	4.0	23.0	21.0	45.7				
Overall mean and standard deviation							4.13	0.825		High

H4 comes with a high score from the participants' point of view of the study sample members, with the overall mean of 4.13, and with the standard deviation of 0.825. SD values of the fourth axis were between 0.928 and 1.19, which are high values, indicating the divergence of views of the respondents on these statements.

The relationship between the application of knowledge management and operational excellence has a high degree of responsiveness. It may be attributed to the role of knowledge management in updating the information available to employees to enhance their operational excellence and increase internal openness among the Bank's departments to enhance operational excellence.

5. Conclusion

This study reveals that the challenges of implementing knowledge management in the banking sector at Jeddah, Saudi Arabia, are positively related to the achievement and improvement of the competitive advantage. In addition, the results indicate that the quality of services within the banking and innovations are achieved using knowledge management aimed at creating competitive advantage. The adoption of knowledge management concept positively impacts customer satisfaction while its implementation is directly related to the operational excellence. Also, these results indicate that competitive advantage is dependent on knowledge management implementation. Furthermore, these results were consistent with previous research that indicated a positive relationship on the application of knowledge management and the attainment of competitive

advantage in the banking sector. Similarly, the past findings indicated that knowledge management positively impacted the levels of organizational performance and there was a positive correlation between knowledge management, competitive advantage, customer orientation, organizational performance and product innovation. Conversely, this study shows that knowledge management impacts the market and customer dimensions whereas the previous studies showed that the market is the only one impacted. Future studies can be done to streamline the necessary employee requirements that promote knowledge management concept in the banking sector to help achieving the competitive advantage.

References

- [1] Mohamed A.F. Ragab, Amr Arisha, (2013). Knowledge management and measurement: a critical review, *Journal of Knowledge Management*, 17(6), 873-901.
- [2] Ahmad, A., Bosua, R., & Scheepers, R. (2014). Protecting organizational competitive advantage: A knowledge leakage perspective. *Computers and Security*, vol. 42, 27-39.
- [3] Alipour, H., Davabi, K., Mehrabi, Z., & Moshtaghi, M. (2010). The role of knowledge management in achievement of competitive advantage: A case study of Iran Alborze Insurance Company in Western Mazandaran. *African Journal of Business Management*, 4(7), 1346-1350.
- [4] Dalkir, K., & Beaulieu, M. (2017). *Knowledge management in theory and practice*. 3rd ed., MIT press.
- [5] Goel, A.; Rana, G. & Rastogi, R. (2010). Knowledge management as a process to develop sustainable competitive advantage. *South Asian Journal of Management*, 17(3), 104-116.
- [6] Tan, C. L., & Nasuridin, A. M. (2011). Human resource management practices and organizational innovation: assessing the mediating role of knowledge management effectiveness. *Electronic Journal of Knowledge Management*, 9(2), 155-167.
- [7] Mahdi, O. R., Almsafir, M. K., & Yao, L. (2011). The role of knowledge and knowledge management in sustaining competitive advantage within organizations: A review. *African Journal of Business Management*, 5(23), 9912-9931.
- [8] Kassab, A. Y. (2016). Knowledge management Practices in the Middle East: challenges and trends. *International Journal of Innovation and Knowledge Management in Middle East and North Africa*. 5(2), 71- 80.
- [9] Singh A., & Soltani, E. (2010). Knowledge management practices in Indian information technology companies, *Total Quality Management & Business Excellence*, 21(2), 145-157.
- [10] Geretto, E. F., & Pauluzzo, R. (2015). Knowledge Management and Risk Culture in the Banking Industry: Relations and Problems, in the 16th European Conference on Knowledge Management, September 3-4, Udine, Italy, 313-320.
- [11] Huang, F.; Gardner, S., & Moayer, S. (2016). Towards a framework for strategic knowledge management practice: Integrating soft and hard systems for competitive advantage. *VINE Journal of Information and Knowledge Management Systems*, 46(4), 492-507.
- [12] Zaky, A. H., M. & Soliman, M. (2017). The effect of knowledge management critical success factors on knowledge management effectiveness and performance: An empirical research in Egyptian banking sector, *The Business and Management Review*, 9(2), 201-211.
- [13] Khanbabaei, A., Lajevardi, S., & JamshidiKohsari, H. (2011). The study of relationship between work teams and favoring knowledge management (Case: Bank Keshavarzi). *Iranian Journal of Management Studies*, 4(1), 79- 92.
- [14] Gourova, E. (2010). Knowledge management strategy for small and medium enterprises. *Proceedings of the International Conference on Applied Computer Science*, September, Malta, 639-648.
- [15] Sitarski, K. (2010). The role of information technology systems in knowledge management. *Foundations of Management*, 2(1), 117-132.
- [16] Awwad, A. S. (2010). The influence of tactical flexibilities on the competitive advantage of a firm: An empirical study on Jordanian industrial companies. *International Journal of Business and Management*, 6(1), 45-60.
- [17] Taherparvar, N., Esmailpour, R., & Dostar, M. (2014). Customer knowledge management, innovation capability and business performance: a case study of the banking industry. *Journal of knowledge management*, 18(3), 591-610.
- [18] Yousef, H. (2015). Studying the components status of the competitive advantage variable in the importer companies of the network products (HP Company) and its relation with demographic variables. *Environment Conservation Journal*, 16(Special Edition), 79-87.
- [19] Rungsrisawas, S., (2016). Competitive advantage effecting firm performance: Case study of small and medium enterprises in Thailand. *International Journal of Economics and Management Engineering*, 10(12), 3892-3896.
- [20] Rezaee, F., & Jafari, M. (2015). The effect of marketing knowledge management on sustainable competitive advantage: Evidence from banking industry. *Accounting*, 1(2), 69-88.
- [21] Dehinbo, J. (2012). Theoretical base for developing a holistic knowledge management strategy for effective learning in organizations. *Proceedings of the 9th International Conference on Intellectual Capital, Knowledge Management and Organizational Learning*, October 18-19, Bogota, Columbia, 70-76.



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