

THE MODERATING ROLE OF BANK TYPE IN THE RELATIONSHIP BETWEEN INNOVATION AND COMPETITIVE ADVANTAGE: THE EGYPTIAN BANKING SECTOR

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ABSTRACT

This paper aims at proposing the right and effective approach to innovation in the Egyptian banking sector which is capable of creating a sustainable competitive advantage in order to achieve the banking objectives in terms of profitability and growth. Therefore, a questionnaire was developed to banks customers of private and public sector in Egypt, to be able to compare between both sectors and investigate the challenges facing each. Regression analysis had been applied and structural equation modeling had been conducted, where it was found that the impact of both; Product Innovation and Process Innovation varies according to different forms of Competitive Advantage; Price, Differentiation, and Delivery.

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INTRODUCTION

The economic environment is changing dramatically nowadays, which causes a significant increase in the business sector competition worldwide. This is a result of globalization, technological development as well as environmental changes and instability and frequent change in the nature of customer demand. This imposes several challenges on the business market, which leads in turn to increased turbulence and complexity in the business environment if it is not met with the right and effective approaches that could achieve sustainable competitive advantage. One important business sector in this context is the Egyptian banking sector, as it is one of the major components of the Egyptian economy nowadays. Thus, it becomes vital to face such challenges mentioned and achieve a competitive advantage of the Egyptian banking sector. A main tool to achieve this is innovation, which is seen as the primary source of sustainable competitive advantages in the knowledge economy. Innovation is referring to new products or processes which address customer needs more competitively and profitably than existing solutions.

It also refers to the continuous flow of new products and services, which are valued by the customer (Bilgihan *et al.*, 2011). Consequently, the banking sector could be able to achieve its goal of profitability and growth. Accordingly, this research is designed to examine the relationship between innovation and competitive advantage in the Egyptian banking sector to choose the right and effective approach of innovation which could provide a sustainable competitive advantage to such a sector. Also, the study will be based on a comparative approach between private and public banks to be able to evaluate the current status of the Egyptian banking sector and propose solutions for both sectors. The next section will introduce recent studies done in the field of the study, while the third section will define the research methodology. The fourth section will present the empirical results and findings, while the fifth and last section will present the conclusion reached out of the current study.

Literature Review

Competition and innovations in the banking sector have increased over the last period in many countries, but still Egypt is fighting to find a way to compete through the development of new products and services. With the evolution of

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technology, innovation was viewed as the search for and adoption of ideas and technologies from outside the firm's boundaries, in which innovations can be commercialized and markets can be entered (Inauen, 2012). So, innovation is concerned with accelerating technological change by ever increasing competitive pressures (Singer *et al.*, 2008). According to Hinson *et al.* (2011), one area that has seen fierce competition in the banking industry is the area of product development. New products such as international funds transfer, school fees loan, negotiable certificate of deposit, car loans, consumer/hire purchase loan, travelers' cheque, etc., have been developed. It should be highlighted that focus on adopting a specific innovation type seems to contribute more to performance than adopting bundles of different types of innovation. As the bank focuses on adopting only administrative process innovation it enjoys higher growth in market share than when it adopts services innovation and technological process innovation in conjunction with administrative process innovation (Baba, 2012). It was claimed that enhancing the innovative ability in organizations is one of the most important levers to increasing profitability and growth in organizations (Dobni, 2010). A study done in Malaysia found that information technology, as one form of innovation is significant in creating a competitive advantage to Malaysian companies (Moghavvemi *et al.*, 2012). One of which provides evidence that innovative marketing is more likely to consist of incessant supplemental adjustments to current activities and practices, which enables organizations in niche markets to differentiate their product or service from the standardized offerings of larger firms (Carson, *et al.*, 2009).

Further, it was proved that product innovation –as one type of innovation - is a tool for competitive advantages which is one of the important strategic choices in new product management concerning the timing of market entry in relation to competitors. However, to gain the full benefits of product innovation, the likelihood of positive market acceptance and the defensibility of the pioneer advantage should be assessed and increased. Market acceptance depends importantly on the product itself and the accompanying marketing program (Luca and Atuahene-Gima, 2007). Thus, innovation is a key source of a competitive advantage that determines the economic success of each organization. If organizations wish to survive and grow in today's turbulent environment, they have to make every effort to introduce an innovative approach and creativity. In the process of innovation, knowledge is an essential element, and in the present competitive environment, innovations help gains an advantage over other organizations. The majority of respondent organizations that participated in the survey stress the importance of knowledge and experience sharing by current employees that encourage the success of innovations (Hana, 2013). Therefore, innovation contributes to achieving a competitive advantage in several aspects, such as market performance, improving process, profitability, and growth (Hana, 2013; Soliman, 2013). Competitive advantage can be gained when an organization produces its products and/or services the organization is able to create more value than its competitors, and resolves bargaining situations with its customers and suppliers to its own advantage (Tsou *et al.*, 2015). An innovative banking system is required to ensure that banks are effective forces for financial intermediation channeling savings into investment fostering higher economic growth. The business drivers for the banking service included several examples, where several innovative services and processes are introduced in the banking sector (Singh,

2004). The advance in technology have created what's called digital natives", the use of electronic channels is growing and these technology-affine customers to become more informed and have the ability to compare services, fees, charges (Fischer 2010). Growing customers use multiple channels to interact with their bank (Cortiñas *et al.*, 2010). However, innovative services, such as personal finance management, crowd funding, mobile payment valued by "digital natives" are commonly not within the scope of the established IT systems offered by banks (Lynch, *et al.*, 2012; Hoppermann 2011; Koller, *et al.*, 2010).

MATERIALS AND METHODS

A questionnaire is adopted for customers of Egyptian banking sector opinion regarding the research dimensions; Product Innovation, Process Innovation, Competitive Advantage Price, Differentiation, and Delivery. The questionnaire is done through a questionnaire provided to Customers of Private and Public Egyptian Banks. All questionnaires were delivered in person by the researcher to the customers. Questionnaire is provided to 178 customers in private banks and 250 customers in public banks. so, Questionnaire is provided to 428 customers in the period of the study. In the questionnaire assigned, the questions were adopted to measure the dimensions under study by implementing a 5-point Likert -scale used for all responses with (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree). The current research proposed a model for the importance of Innovation to enhance Competitive Advantage in the Egyptian banking sector. The model contains the variables; Product Innovation, Process Innovation, Competitive Advantage Price, Competitive Advantage Differentiation, and Competitive Advantage Delivery. The research framework is illustrated using the following figure:

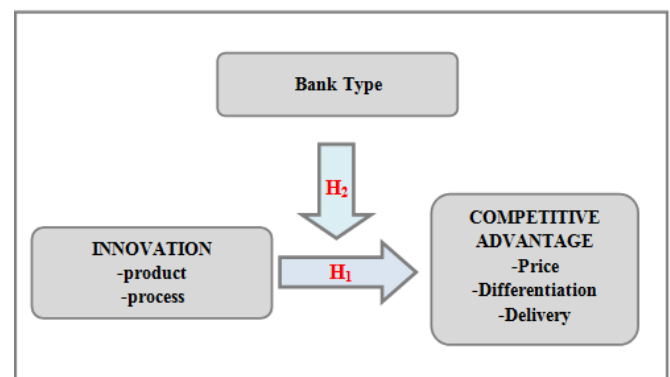


Figure 1. Research Framework

Accordingly, the research hypotheses could be formulated as follows:

- H₁:** There is a significant Difference in Innovation and Competitive Advantage According to Bank Type
- H₂:** There is a significant impact of Innovation on Competitive Advantage in the Egyptian Banking Sector
- H₃:** Bank Type (Private versus Public) moderates the relationship between Innovation and Competitive Advantage

RESULTS AND DISCUSSION

To test the hypotheses mentioned above, the current research used regression analysis as well as presenting a descriptive

analysis of the research variables under study. After that, the researcher will present the hypotheses testing through the Structure Equation Model using regression analysis.

Descriptive Analysis: Table 1 shows the mean and standard deviation of the research variables, as well as the corresponding frequencies for the responses of Private and Public Banks. It was noticed that the mean values of all the research variables are slightly more in private banks than public banks.

Testing Difference in Innovation and Competitive Advantage According to Bank Type: Table 2 shows the t-test conducted to compare means of research variables between private and public banks. It was found that there is a significant difference in Product Innovation, Price Innovation, Competitive Advantage - Price, Differentiation and Delivery between Private and Public Banks, as all corresponding P-values are less than 0.05. Recognizing the mean values, it could be noticed that mean Product Innovation of Private banks (Mean = 3.5562) is higher than that of Public banks (Mean = 3.1440). Also, the mean Process Innovation of Private Banks (Mean = 3.6011) is higher than that of Public banks (Mean = 3.2560). Similarly, the mean Competitive Advantage price, Competitive Advantage Differentiation and Competitive Advantage Delivery of Private Banks are higher than that of Public banks.

Testing the Impact of Innovation on Competitive Advantage: Table 3 displays the results of the SEM of the impact of Product Innovation and Process Innovation on “Competitive Advantage - Price”. The model fit indices were found to be CMIN/df = 2.960, GFI = 0.951, CFI = 0.962, and REMSA = 0.068 are all within their acceptable levels. It was shown that there is a significant impact of both; Product and Process Innovation on Competitive Advantage - Price, as P-value is 0.000 and 0.005 respectively. Also, it was shown that there is a significant impact of both; Product and Process Innovation on Competitive Advantage - Differentiation, as P-values are 0.000 for both effects. In addition, there is a significant impact of both; Product and Process Innovation on Competitive Advantage - Delivery, as P-value is 0.001 and 0.000 respectively. It could also be observed that all Beta coefficients are greater than 0, implying the fact that the Innovation impact is significant positive on Competitive Advantage. Also, the R square corresponding to price was found to be 0.451, which means that Innovation explains 45.1% of the variation in the competitive advantage – price. Similarly, the R square corresponding to price was found to be 0.450, which means that Innovation explains 45% of the variation in the competitive advantage – delivery. Finally, the R square corresponding to price was found to be 0.497, which means that Innovation explains 49.7% of the variation in the competitive advantage – differentiation.

Table 1. Descriptive Analysis of the Research Variables

Bank Type		N	Mean	Std. Deviation	Frequency				
Private	GENDER	178			Male			Female	
					92			86	
	Edu	178			Bsc	Post Grad	Msc	PhD	Other
					74	34	42	20	8
	Age	178			Less than 30	31 to 40	41 to 50	More than 50	
					26	83	56	13	
	Experience	127			Less 1 y	1 to 5 y	6 to 10 y	11to15 y	More 15 y
					21	36	36	21	13
	Product	178	3.5562	.84351	1	2	3	4	5
					2	19	51	90	16
Process	178	3.6011	.87230	1	22	45	89	21	
ComPrice	178	3.5056	.85203	2	15	73	67	21	
ComDiff	178	3.5449	.90241	2	23	50	82	21	
ComDel	178	3.5674	.89471	1	19	63	68	27	
Public	GENDER	249			Male			Female	
					139			110	
	Edu	250			Bsc	Post Grad	Msc	PhD	Other
					102	40	65	10	33
	Age	250			Less than 30	31 to 40	41 to 50	More than 50	
					38	126	72	14	
	Experience	222			Less 1 y	1 to 5 y	6 to 10 y	11to15 y	More 15 y
					24	69	92	29	8
	Product	250	3.1440	.94596	10	53	91	83	13
					9	34	103	92	12
Process	250	3.2560	.88180	5	33	10	96	10	
ComPrice	250	3.2920	.82063	21	42	80	94	13	
ComDiff	250	3.1440	1.03516	13	44	82	87	24	
ComDel	250	3.2600	1.02597						

Table 2. T-testing Analysis between Research Variables

	Bank	N	Mean	Std. Deviation	p-value
Product Innovation	Private Banks	178	3.5562	.84351	0.000
	Public Banks	250	3.1440	.94596	
Process Innovation	Private Banks	178	3.6011	.87230	0.000
	Public Banks	250	3.2560	.88180	
Competitive Advantage – Price	Private Banks	178	3.5056	.85203	0.010
	Public Banks	250	3.2920	.82063	
Competitive Advantage - Differentiation	Private Banks	178	3.5449	.90241	0.000
	Public Banks	250	3.1440	1.03516	
Competitive Advantage – Delivery	Private Banks	178	3.5674	.89471	0.001
	Public Banks	250	3.2600	1.02597	

Table 4. SEM for Impact of Innovation on Competitive Advantage

			Estimate	S.E.	C.R.	P-value
Price	<---	ProductInnovation	.334	.075	4.471	***
Differentiation	<---	ProductInnovation	.582	.092	6.295	***
Delivery	<---	ProductInnovation	.354	.108	3.265	.001
Price	<---	ProcessInnovation	.208	.074	2.797	.005
Differentiation	<---	ProcessInnovation	.327	.096	3.410	***
Delivery	<---	ProcessInnovation	.519	.119	4.343	***

Table 5. SEM for the Moderation Role of Bank Type

			Estimate	S.E.	C.R.	P-value
Price	<---	ProductXType	-.452	.121	-3.730	***
Differentiation	<---	ProductXType	-.706	.174	-4.065	***
Delivery	<---	ProductXType	-.802	.185	-4.332	***
Price	<---	ProcessXType	-.027	.095	-.287	.774
Differentiation	<---	ProcessXType	-.196	.131	-1.494	.135
Delivery	<---	ProcessXType	-.036	.152	-.239	.811

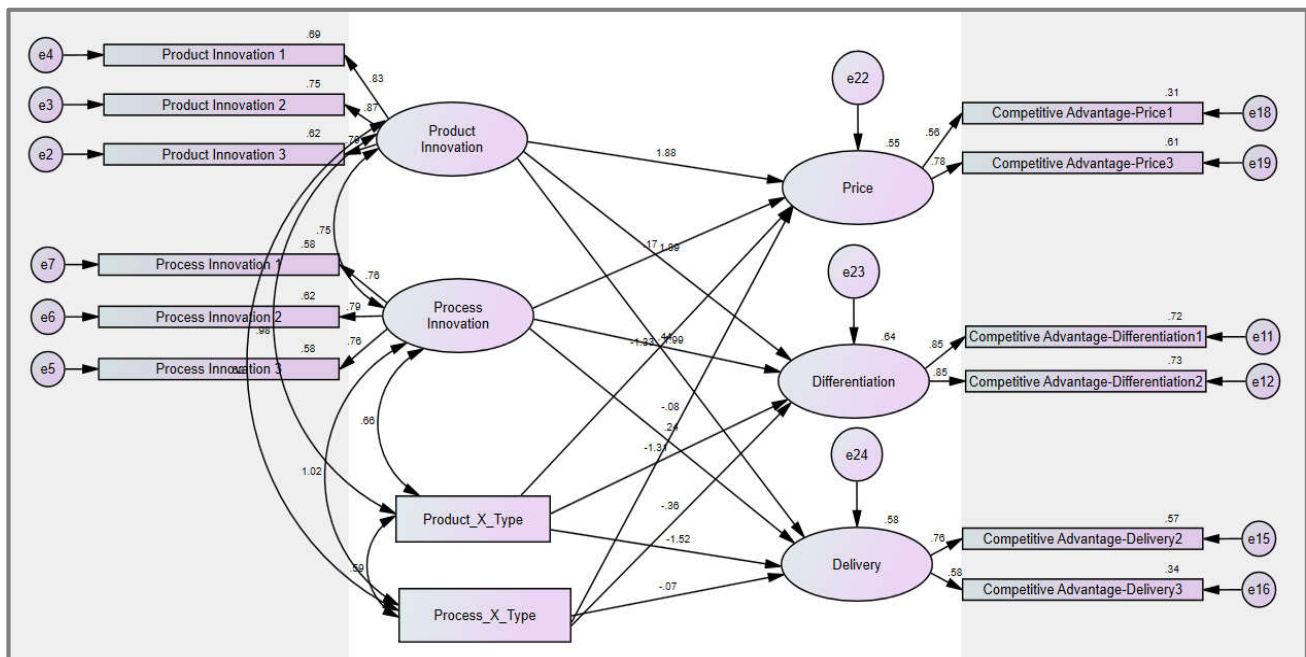


Figure 2. The Structural Equation Modeling (SEM)

Testing the Moderation Role of Bank Type on the Relationship between Innovation and Competitive Advantage: Table 4 displays the results of the SEM of the impact of interaction of bank type with both; Product Innovation and Process Innovation on “Competitive Advantage – Price, Differentiation and Delivery”. It was shown that there is a significant interaction impact of Product Innovation with Bank Type on Competitive Advantage – Price, Differentiation and Delivery, as P-value is 0.000. On the other hand, there is an insignificant interaction impact of Process Innovation with Bank Type on Competitive Advantage – Price, Differentiation and Delivery, as P-value is 0.000. The following figure 2 shows the SEM model drawn to show the direct impact of Innovation on Competitive Advantage, as well as the moderation role of Banking Type.

Conclusion

The current study identifies potential insights into the ways Innovation could support Competitive Advantage mechanisms to gain a Competitive Advantage in the Egyptian banking sector. Thus, the researcher differentiates between such impact in private versus public sector, which shows a significant

difference in all the research variables; Product Innovation, Process Innovation, Competitive Advantage- Price, Differentiation and Delivery. Also, it was found that the research variables are relatively better in the private banks than those in the public sector, revealing the fact that customers have better preference regarding the field of the study in the private sector than the public sector. Accordingly, further investigations had been conducted by fitting models for both; Public and Private banks, which shows different results. Concerning the Competitive Advantage – Price, it was found that Process Innovation have significant impact on Competitive Advantage – Price, while Product Innovation have significant impact on Competitive Advantage – Price in private banks. On the other hand, it was observed that Product Innovation have significant impact on Competitive Advantage – Price, while Process Innovation have significant impact on Competitive Advantage – Price in public banks. Also, it was observed that the impact of both; Product and Process Innovations is shown to be slightly higher in Private banks than that in Public banks. This might be due to the fact that unless private banks introduce new products, customers will prefer public banks, as they are convinced that private banks apply relatively higher fees for different services than public

banks. In general, the resulting impact of innovation on the Price is not high due to the fact that Innovation depends on customers awareness, which is still not very good due to the Egyptian culture. Concerning the Competitive Advantage – Differentiation, it was found that only Product Innovation has significant impact on Competitive Advantage - Differentiation in Private Banks. On the other hand, both; Product Innovation and Process Innovation have a significant impact on Differentiation in public banks. Surprisingly, the overall impact of innovation in the private banks is still slightly higher than of Public banks. This is due to the fact that economic and political issues currently in Egypt imply some restrictions given by the central bank, which imposes banks to work within certain regulations which does not allow flexible movements for the banking sector. Concerning the Competitive Advantage – Delivery, it was observed that Product Innovation have significant impact on Competitive Advantage – Delivery, while Process Innovation have significant impact on Competitive Advantage – Delivery in private banks. On the other hand, it was observed that Process Innovation have significant impact on Competitive Advantage – Delivery, while Product Innovation have significant impact on Competitive Advantage – Delivery in public banks. Also, the overall impact of Innovation on Delivery in Private Banks is slightly higher than that of Public banks.

REFERENCES

- Baba, Y. 2012. Adopting a specific innovation type versus composition of different innovation types: Case study of a Ghanaian bank. *International Journal of Bank Marketing*, 30(3), pp.218-240.
- Bilgihan, A., Okumus, F., “Khal” Nusair, K. and Joon-Wuk Kwun, D. 2011. Information technology applications and competitive advantage in hotel companies. *Journal of Hospitality and Tourism Technology*, 2(2), pp.139-153.
- Carson, K.R., Evens, A.M., Richey, E.A., Habermann, T.M., Focosi, D., Seymour, J.F., Laubach, J., Bawn, S.D., Gordon, L.I., Winter, J.N. and Furman, R.R. 2009. Progressive multifocal leukoencephalopathy after rituximab therapy in HIV-negative patients: a report of 57 cases from the Research on Adverse Drug Events and Reports project. *Blood*, 113(20), pp.4834-4840.
- Cortiñas, M., Chocarro, R. and Villanueva, M.L. 2010. Understanding multi-channel banking customers. *Journal of Business Research*, 63(11), pp.1215-1221.
- Dobni, C.B. 2010. The relationship between an innovation orientation and competitive strategy. *International Journal of Innovation Management*, 14(02), pp.331-357.
- Fischer, D., Pennington, H., Clark, B., Taylor, O. and Walters, C., Red Hat, Inc., 2010. *Identity management for open overlay for social networks and online services*. U.S. Patent 7,792,903.
- Hana, U. 2013. Competitive advantage through innovation and knowledge. *Journal of competitiveness*. 5 (1), 82, 96.
- Hinson, R., Owusu-Frimpong, N. and Dasah, J. 2011. Brands and service-quality perception. *Marketing Intelligence & Planning*, 29(3), pp.264-283.
- Inauen, M. and Schenker-Wicki, A. 2012. Fostering radical innovations with open innovation. *European Journal of Innovation Management*, 15(2), pp.212-231.
- Hoppermann, C., Trippel, T. and Zinn, C. 2011. Managing linguistic resources by enriching their metadata with linked data. In *10th International Semantic Web Conference (ISWC2011) Bonn*.
- Koller, T., Goedhart, M., Wessels, D. and Copeland, T.E., 1946. McKinsey and Company, 2010. *Valuation: measuring and managing the value of companies*, 5.
- Luca, L.M.D. and Atuahene-Gima, K. 2007. Market knowledge dimensions and cross-functional collaboration: Examining the different routes to product innovation performance. *Journal of marketing*, 71(1), pp.95-112.
- Lynch, W., Tenbrock, M., Neuhauser, A., Jain, A. and Krug, W.K.K., Nielsen Audio Inc, 2012. *System and method for utilizing audio encoding for measuring media exposure with environmental masking*. U.S. Patent Application 13/338,588.
- Moghavvemi, S., Hakimian, F., Feissal, T. and Faziharudean, T.M. 2012. Competitive advantages through IT innovation adoption by SMEs.
- Singer, D., Avery, A. and Baradwaj, B. 2008. Management innovation and cultural adaptivity in international online banking. *Management research news*, 31(4), pp.258-272.
- Singh, S.K., Hawkins, C., Clarke, I.D., Squire, J.A., Bayani, J., Hide, T., Henkelman, R.M., Cusimano, M.D. and Dirks, P.B. 2004. Identification of human brain tumour initiating cells. *nature*, 432(7015), pp.396-401.
- Soliman, F., 2013. Attributes of the learning-innovation transformational leader. *Learning Models for Innovation in Organizations: Examining Roles of Knowledge Transfer and Human Resources Management: Examining Roles of Knowledge Transfer and Human Resources Management*, p.251.
- Tsou, C.C., Avtonomov, D., Larsen, B., Tucholska, M., Choi, H., Gingras, A.C. and Nesvizhskii, A.I. 2015. DIA-Umpire: comprehensive computational framework for data-independent acquisition proteomics. *Nature methods*, 12(3), pp.258-264.
