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Research on Mission Pricing of Crowdsourcing APP

Jiang Shaoyan^{1,3}, Lin Songhao², Chen Yiquan^{2,3}, Zhang Yuanbiao^{3,4,5}

¹International Business Institute, Jinan University, Zhuhai 519070, China

²Electrical and Information Engineering Institute, Jinan University, Zhuhai 519070, China

³Mathematical Modeling Innovative Practice Base, Jinan University, Zhuhai 519070, China

⁴Packaging Engineering Institute, Jinan University, Zhuhai 519070, China

⁵Key Laboratory of Product Packaging and Logistics of Guangdong Higher Education Institutes, Jinan University, Zhuhai 519070, China

Correspondence: Jiang Shaoyan, International Business Institute, Jinan University, Zhuhai 519070, China; Mathematical Modeling Innovative Practice Base, Jinan University, Zhuhai 519070, China.

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Abstract

In order to have a better study of pricing of crowdsourcing APP tasks, mission data was collected about an already completed project, including the location, pricing and fulfillment of each mission. Get the law of the task pricing of the completed projects by analyzing the location distribution of the task points and the members, and then analyze the reason of the task failure. Besides, combine the information data of the members to improve the original pricing model based on the K-means clustering. Focus on the task package pricing, design a better task pricing model to improve the success rate of the task.

Keywords: crowdsourcing task pricing model, cluster analysis, package pricing

1. Introduction

In the era of big data, the collection of data presents many complicated problems. It is hard to satisfy the diversified data needs of organizations for an organization with only individual organization. The self-service crowdsourcing platform based on mobile Internet such as "making pictures and making money" adopts the shared economy mode, that is, the crowdsourcing mode, which greatly saves the investigation cost and shortens the investigation period, so that it provides a large amount of data for the organization at a lower cost.

At present, the research on crowdsourcing task mainly focuses on the developmental status of crowdsourcing and its advantages. HOWE J (2006) proposed the concept of crowdsourcing. Yan Jie et al (2017) explored the definition, patterns, composition and workflow of crowdsourcing. Zhao Jiamin (2015) obtained the conclusion that the advantages of crowdsourcing are improving efficiency and the fully elastic production scale. Huang Mincong (2016) studied the development of crowdsourcing research platform and its operating mode, and proposed the ways to operating crowdsourcing platform. Liu Ya-ru (2016) thinks crowdsourcing delivery model is more excellent than the traditional distribution methods, which achieves the integration of social idle resources. However, with the development of crowdsourcing platforms, platforms have gradually exposed problems. Pang Jianguang (2015) put forward that Internet-based crowdsourced communities are good for exploiting the wisdom of the general public, but due to the asymmetry of information, there are some risks, so the risk management mechanism of crowdsourced communities should be improved. In response to the fraudulent activities in the crowdsourcing platform, Fei Youli et al. (2015) proposed that the credit evaluation system should be improved, the fraudulent screening mechanism should be optimized, and the relevant legal system should be established and improved.

Some researchers also study the distribution of crowdsourcing tasks from the dynamic crowdsourcing task. On the premise of considering the dynamic characteristics of distribution demand, Zhao Xinglong (2016) established a dynamic model of crowdsourcing distribution path to improve the public Package distribution staff word delivery revenue and customer service experience. Qian Guang (2017) introduced personalized service into crowdsourcing logistics model to explore the impact of personalization in total logistics on customer satisfaction, namely the completion of tasks and the failure of identification. Wu Jinghong and Lv Nengfang (2016) analyzed the key players such as the outsourcing parties and outsourcing parties in the crowdsourcing mode of express delivery

companies and put forward the key tactics for the express delivery enterprises to build crowdsourcing model.

However, few articles study the crowdsourcing task based on the static distribution of crowdsourcing tasks and the pricing of tasks. Static crowdsourcing tasks are relative to the dynamic terms, and it is the task that after publishers release of tasks, the number of tasks released on the platform are fixed. In this paper, by analyzing the distribution of the tasks and membership positions of a completed project, we get the task pricing rules and tasks pricing model. Introducing the K-means clustering to a new pricing model to improve the success rate of the task, which provide a reference for the pricing of crowdsourcing APP tasks.

2. Data Source and Processing

2.1 Data Source

Based on the original data of the 2017 National Collegiate Mathematical Contest in Higher Education (SCE), according the task data of a completed project, including the location, pricing and completion of each task("1" indicates completion and "0" indicates uncompletion), explore the project's task pricing rules and analyze the reasons for the task is not completed. According to the information of members, including the position of member, the credit value, reference to the credibility of its mission to start booking time and booking limit, design a new task pricing program to improve the success rate of the task.

2.2 Data Processing

Use the Baidu Map to mark the location of the task points, members of the seat on the map, and make a statistical processing to identify the representative of the city as an analysis example. The urban distribution of this completed mission data is shown in Table 1.

Table 1. Mission points, the number of members in each city distribution

City	Shenzhen City	Dongguan city	Foshan City	Guangzhou City	others
Number of mission points	164	175	174	321	1
The number of members	629	352	216	665	15

3. Task Pricing Rule Analysis and Establishment of Pricing Model

3.1 Task Pricing Rule Analysis

According to the available data, it is assumed that the difficulty of each task is same, so the pricing is mainly affected by the spatial location distribution. Using the triangle derivation formula to calculate the distance between the task point and each member position in the city, and then take the average value to indicate the distance between the task point and the member position. The relationship between the distance and pricing in Shenzhen are shown in Figure 1 and Figure 2.

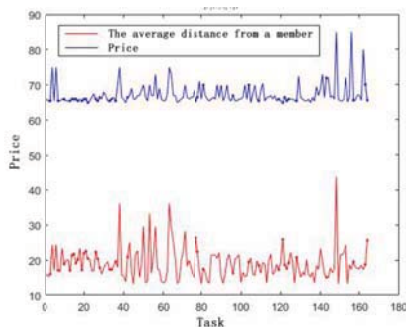


Figure 1. The curve about the relationship between the distance and pricing in Shenzhen

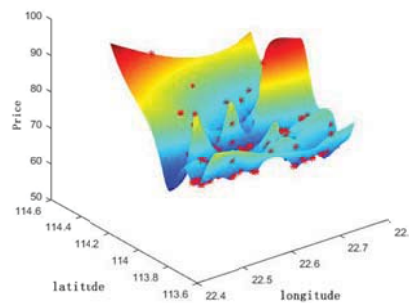


Figure 2. The three-dimensional surface map about tasks intensive distribution and pricing in Shenzhen

From Figure 1 and Figure 2, it is clear that the pricing of each task fluctuates with the distance between the task point and the member's position, especially in the vicinity of 40, 60 and 150 task points. When the task point and the member's distance at the maximum, the task point pricing will increase sharply. Contact the actual situation shows that when the task points is far away from others, their pricing will be a corresponding increase. And when the task points are close to others, their pricing is lower and more stable.

According to the pricing rules of tasks in Shenzhen and the data of other cities, it is clear that there are two rules in the pricing of tasks: the pricing of tasks is positively related to the distance of members, that is, when the

position of the task is far away from more members, the corresponding will be increased. Another is the task pricing and the distribution of the task itself has a negative correlation between the concentration, that is, when the task distribution is more intensive, the all of tasks' price will be reduced.

3.2 Establishment of Pricing Model

(1) Establishment of pricing model

In this paper, the static crowdsourcing task is considered, that is, the number of platform members does not change over time. The model includes multiple tasks and multiple platform members for one task.

Each member a_i contains two attributes: one is the cost of completing the task c_i , and another one is the number of tasks w_i that the platform members can complete, namely the task reservation quota. However, in practice, the task publishers don't know these two attributes of the members, and their purpose is to be able to receive the tasks from the platform members under the lowest cost. Therefore, this paper judges the quality of the completion of the task based on the credit value of the member, so as to maximize the task publishers' profits.

Therefore, before determining the task pricing, the paper first explore the quality of the completed work by analyzing the creditworthiness of the members. At the pricing stage, according to the cost and the number of tasks that can be accomplished by the member, we use the pricing mechanism to design a platform member. Finally, according to the first part of the quality results are sorted in descending order, priority to select high-quality members to complete the task. The specific algorithm is as follows:

Crowdsourcing platform pricing mechanism design algorithm:

Step 1: Enter the platform member attribute data $\{(c_1, w_1), (c_2, w_2), \dots, (c_n, w_n)\}$, c_j relates to the distance between

members and task and member's credit value, w_j represents maximum limit for the task;

Step 2: Initialize, set $i = 1$, for each task b_i , repeat the following steps:

Step 3: Set $j = 1$, sort the member data a_j by $\{c_1 \leq c_2 \leq \dots \leq c_n\}$;

Step 4: If the current member a_j has selected the number of tasks $\bar{w}_j < w_j$, then $\bar{w}_j = \bar{w}_j + 1, p = c_i$, otherwise, repeat this step;

Step 5: End step 2 cycle;

Step 6: The algorithm is over.

When the unit price of task is $p = c_i$, the number of tasks assigned to platform members a_i can be expressed as \bar{w}_i . There are three main reasons for designing this pricing strategy: First, the cost is sorted according to the distance between platform member and task location, which can avoid pricing too high or too low; Secondly, under the condition of maximizing the profit of the task publisher, select the tasks are priced low enough to control the cost of the task; Thirdly, for the platform members, the task price is in line with the expected return of most members, so it will have a high acceptance, and will not make the task unattended, leading to the failure of the task.

(2) Taking Shenzhen as an Example to Solve Task Pricing Model

Taking Shenzhen as an example, substitute the task information data and membership information of Shenzhen into the pricing model based on mechanism design theory to implement this pricing scheme for different tasks in this project, and the crowdsourcing task are priced. The part of the results shown in Table 2:

Table 2. Pricing of Tasks in Shenzhen Based on Mechanism Design Theory

Task number	New pricing	Task number	New pricing	Task number	New pricing
A0001	65.37	A0011	66.36	A0021	67.02
A0002	67.47	A0012	66.44	A0022	66.50
A0003	65.17	A0013	65.70	A0023	66.46
A0004	70.22	A0014	66.74	A0024	66.28
A0005	65.51	A0015	66.84	A0025	65.96
A0006	70.18	A0016	66.16	A0026	66.99
A0007	65.65	A0017	66.43	A0027	66.49
A0008	65.38	A0018	67.21	A0028	65.77
A0009	67.21	A0019	65.72	A0029	65.41
A0010	66.10	A0020	66.88

(3) Comparative Analysis of New Pricing and Original Programs

The Shenzhen pricing data shows that the mean price of the task is 68.00 yuan based on design of the mechanism, while the average of the original pricing scheme is 67.33 yuan, so the price increase is not large. However, based on the design of the mechanism, task pricing fully accounts of the membership credit value of the impact, improve the task completion rate.

4. Pricing Model of Task Based on K-Means Clustering

4.1 K-Means Clustering Tasks to Package

The K-means clustering algorithm [8] has high efficiency for processing large data sets, especially when the sample distribution is in-class agglomeration, which can achieve good clustering effect. The basic idea is as follows: the objects are divided into k clusters, making the clusters have a high degree of similarity, while the similarity between clusters is lower. The general steps are as follows:

Step1: Randomly select k objects from n data object as the initial cluster center;

Step2: Calculate the Euclidean Distance between each object in the sample set and these center objects according to the mean value (center object) of all the objects in each cluster, and then divide the corresponding objects according to the minimum distance again;

Step3: Recalculate the mean (center object) of each (changing) cluster;

Step4: Loop Step2 to Step3 until each cluster no longer changes, and output k cluster satisfying the minimum variance standard.

Considering that the completion of some tasks in the project has not been successfully completed, which still has failure. In order to improve the completion rate of the task, starting from the cost of task publisher and the reward of platform members, the weighted European distance K-means clustering algorithm is used to divide the positions of the task points. For reference, Zhou Shibing proposed a new algorithm to determine the optimal clustering number of K-means clustering algorithm based on the design of a new clustering effectiveness index, identified the clustering numbers k when the task location was divided, so as to further realize the task packing in similar distance.

Using MATLAB software to perform K-means clustering on the task positions of completed projects in Shenzhen, the packing situation of similar tasks is obtained, with a total of 40 clusters. The relative positions of all the task points after clustering are shown in Figure 3.

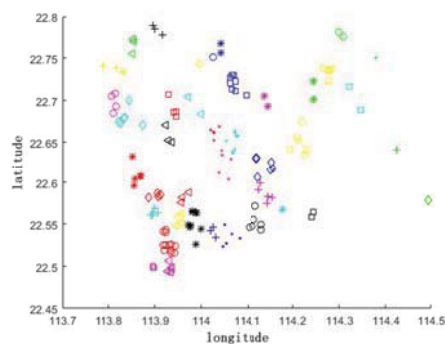


Figure 3. The relative positions of all the task points after clustering in Shenzhen

Observing the figure above, we find that the locations of some of the mission sites are relatively concentrated. Therefore, these tasks can be packaged and released jointly, which not only avoids publisher's trouble with the follow-up communication members about completing the "one-on-one" task, but also reduces the pricing of the release of these tasks. At the same time, for the platform members, the choice of multiple tasks within a small range not only be able to get a considerable price benefits, but also because of its mission from multiple tasks within a small range control the cost of the member to complete the task. In the end, it can reach a win-win situation, while meeting the task of the publisher and platform members expected goals.

4.2 Solved and Analyzed Pricing Result of Packaged Task

Based on the improvement of task pricing model established in 3.2, firstly, package the previous location of the task to price and distribute a task pricing and distribution. In determining the pricing of a task package, the task using each package the maximum value of the task package plus the package task pricing averages. Secondly, multiply by the number of tasks contained in the package and then multiply by a certain percentage of the price

of the task package. Among them select the maximum value of the task can offset the members alone to complete each task required in the package, and the average value of the task pricing is representative in the package. On the other hand, in order to meet the maximization of the revenue of the task publisher and the platform member, the ratio can be 0.618, the golden section, so that the task publisher has a minimum cost, and membership can receive the most effective task.

Task package pricing expression is as follows:

$$P = \max p_i + \bar{p}_i \times 0.618 \times (n-1) \{i=1,2,\dots,n\}$$

Among them, P represents the cost of a task package, n represents the number of tasks packaged in a task package, $\max p_i$ represents the maximum value of the pricing of tasks p_i received by a member within a task package, \bar{p} represents the mean value of the pricing of tasks received by members within a task package.

Based on the mechanism design theory of the task pricing model, using MATLAB software to calculate the task data in Shenzhen, get the tasks' numbers and price after being packaged as shown in Table 3.

Table 3. Shenzhen the tasks' numbers and price after being package

Package the number of tasks	Pricing	Package the number of tasks	Pricing	Package the number of tasks	Pricing	Package the number of tasks	Pricing
3	152.14	13	551.19	2	117.14	7	321.61
5	240.80	1	73.18	1	69.80	1	72.24
4	192.13	6	285.86	2	109.66	4	193.26
5	248.39	5	237.70	14	599.33	10	435.15
2	108.74	5	233.12	3	150.19	2	114.64
5	233.32	4	196.07	6	278.13	5	232.38
1	74.82	2	118.83	3	155.89	2	111.97
1	68.74	5	230.39	2	113.61	1	72.03
8	366.08	5	233.53	2	108.00	4	193.24
3	156.11	3	155.04	4	196.68	3	151.20

Comparing with 3.2 results, found that the packaged task in Shenzhen City, the total cost was 7952.33 yuan, and the total cost of packaging before the task was 11,152.33 yuan. We can see that a more concentrated package of tasks can reduce the cost of the task publisher of publishing the task of pricing after being integrated to a great extent.

On the other hand, members with higher creditworthiness can choose the task package closest to them within the scope of their pre-defined task quota, and accomplish multiple tasks within the task package at one time, resulting in higher economic benefits. Compared with the selection of members after each task is released separately, the distribution of focused tasks after being packaged meets the target of reducing the member's paying cost and obtaining a considerable profit.

At the same time, by observing the formula of the task package pricing, the more number k of K-means clustering, the smaller of cost of the task publisher, but each member will be bound by the task quota when receiving the task. Therefore, when the number of clustering is too small, the number of tasks in each task package will be too much, which will result in many members can't receive the task package, resulting in the increase of the failure rate of the task. Therefore, it is necessary to determine the reasonable K-means clustering number k .

5. Conclusion

5.1 Practical Significance

Through the research of this paper, it is found that the task attribute and the membership attribute lead to different competitive conditions in the crowdsourcing task market, which causes the task publisher to adopt different bidding strategies.

Specific with the actual situation, the task of pricing may also have the following conditions: the higher price of crowdsourcing platform similar tasks recently, the higher the task pricing; the shorter the task requirements of the completion of the task, the higher the pricing, etc. All of these results are determined by the incentive mechanism theory. On the crowdsourcing task platform, the task of publishers and members are often expected to be able to get their own income maximization. Platform members will choose some of their more favorable tasks to complete. Therefore, high pricing of tasks is a big attraction for members. And task publishers balance other factors based on pricing, such as ensuring completion of tasks, quality of accomplishment, and so on.

However, platform members may not be able to accomplish the task efficiently and effective after receiving the task. To ensure the quality of the task completion, the crowdsourcing platform should improve the business risk management. The platform not only needs to verify the real name of the platform member "package", but also

improve the credit rating system. Tu Shuli (2015) mentioned that in the delivery of crowdsourcing delivery model, in order to avoid the loss and damage of items in the distribution process, the platform will take full insurance insurers, cargo loss compensation protection and other measures. Therefore, in order to ensure the successful completion of the task, the platform can imitate the delivery mode of crowdsourcing management, to collect margin members, the failure of the task of compensation protection and other measures. In the meantime, some certain task recipients will get quick answers but not right, which can optimize their time efficiency and earn more money. To avoid this phenomenon, crowdsourcing platforms should also take steps to identify counter-frauds.

5.2 Essay Innovation

In the process of solving the problem, this paper integrates the mechanism design theory and task pricing - attribute information theory, and applies these theories in the new field of mobile Internet - the task pricing of self-service labor crowdsourcing platform. The paper explores the way for the development of crowdsourcing model in new field, and points out the influencing factors of task bidding, which is conducive to the adoption of shared economy model crowdsourcing website platform to better serve the task of publishers, but also providing some reference for the tasks of the task of pricing publisher.

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Innovation Adoption in Mexican Small Family Firms

Sandra Yesenia Pinzón-Castro¹, Gonzalo Maldonado-Guzmán¹, & José Trinidad Marín-Aguilar¹

¹Centro de Ciencias Económicas y Administrativas, Universidad Autónoma de Aguascalientes, Mexico

Correspondence: Gonzalo Maldonado-Guzman, Centro de Ciencias Económicas y Administrativas, Universidad Autónoma de Aguascalientes, Aguascalientes, Mexico, Avenida Universidad No. 940, Ciudad Universitaria, C.P. 20131, Mexico.

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Abstract

Innovation is a topic that has been widely analyzed and discussed in the literature of business and management sciences and there a far and wide consensus among scholars, researchers and professionals that innovation activities should be considered not only as a business strategy but also as a daily activity in enterprises, especially in small and medium-sized ones. However, a high percentage of theoretical and empirical published investigations have focused in the innovation activities of big enterprises while only a small percentage has analyzed this construct in small and medium-sized enterprises. Only a few of them have focused in small, family-owned enterprises even when this type of business is the most representative of the economy and society in country around the world. Therefore, the main goal of this empirical research is the analysis of adopting innovation activities in small, family-owned businesses in an emerging country, as it is the case of Mexico. The results obtained show that there is a clear adoption of innovation in products, processes and management systems from small family businesses.

Keywords: innovation adoption, family firms, small business

1. Introduction

There is an extensive publication of theoretical and empirical researches in the current literature of business and management sciences that has analyzed and discussed at length the characteristics and return of enterprises regarding innovation activities (Lodh, Nandy & Chen, 2014). However, relatively few investigations have analyzed the existing relation between small family businesses and innovation activities (Craig & Moores, 2006). Only a few of them have focused in countries with emerging economies (as it is the case of Mexico) even when the globalization of the economy and markets provide several opportunities for family businesses to adopt and implement innovation activities. Such activities allow them not only to improve their level of competitiveness but also to survive in the long run (Aghion, Burgess, Redding & Ziliboti, 2005).

Similarly, there is a general consensus in the literature that family businesses are the most common type of enterprise that exist in the economy and society in developed countries, those with emerging economies and developing ones. There is an extensive literature that has analyzed and discussed the importance of the owner of family businesses (Villalonga & Amit, 2006) but there is a void in the literature regarding investigations that analyze the importance of innovation in small family businesses (Lodh *et al.*, 2014). Thus, the scarce research studies have found positive and significant results in both developed countries (Kim, Kim & Lee, 2008; Chen & Hsu, 2009) as well as countries with an emerging economy and developing ones (Sirmon, Arregle, Hitt & Webb, 2008; Block, 2012).

Accordingly, in a recent investigation by Le Breton-Miller, Miller and Lester (2011) found contradictory evidence in the investment made in innovation activities by small family businesses. As a result, these authors concluded that the managers and/or owners of family enterprises usually adopt conservative strategies, which provide them with regular returns and restrict too much the investment in innovation activities because of the fear of taking risks and preferring always the comfort zone of their investment (Le Breton-Miller *et al.*, 2011). Moreover, in a previous research, James (1999) had already considered that the managers and/or owners of small family enterprises sacrifice their personal interest to invest more economic resources in innovation activities in order to improve the financial capacity of enterprises.

Nonetheless, in developing countries and with an emerging economy, there is usually no protection of

investments, an inefficient judicial system, a weak protection of intellectual property, a legal system with high levels of corruption, underdeveloped capital markets and many other limitations that force family business to focus in obtaining a higher level of business return rather than adopting innovation activities (Khanna & Palepu, 2000a, b) even when it has been widely acknowledged in the literature that the adoption and implementation of innovation activities allow enterprises to increase significantly their level of return as well as the value addition of their products (Blundell, Griffith & Van Reenen, 1999; Cho & Puick, 2005).

In this regard, some of the investigations published in the literature that link small family businesses and innovation activities have been able to do it from the perspective of external resources (Sirmon & Hitt, 2003) or from the perspective of the agency (Morck & Yeung, 2003; Choi, Lee & Williams, 2011) but there are not studies that have considered the perspective of the adoption of innovation activities. That is why it is necessary to increase the theoretical and empirical evidence of the adoption of innovation activities in small family businesses from this perspective (Laforet, 2013; Lodh *et al.*, 2013; Brines, Shepherd & Woods, 2013). Therefore, the main contribution of this empirical research is the analysis and discussion of the adoption of innovation activities in small family businesses in a country with an emerging country, which is the case of Mexico, as it suggests Laforet (2013), Lodh *et al.* (2014) and Brines *et al.* (2013).

2. Method

In the literature of business and management sciences, there is a wide debate among researchers, scholars, and professionals about the conceptualization of family business and there is still no agreement regarding a clear and precise definition (Wortman, 1994; Upton & Heck, 1997; Upton, Teal & Felan, 2001) despite it had already been established that in order to define a family enterprise it should have a series of requirements in order to be considered one of them (Handler, 1994; Litz, 1995). Additionally, Sharma, Chrisman and Chua (1997) concluded that the essential aspects that family enterprises should have is that the managers are the owners and have the control of the organization, the family must have a strong influence in making decisions and there must be a control transfer of the enterprise to the next family generations.

Similarly, there is in the current literature an important interest from researchers, scholars and professionals about the study and analysis of the continuous growth of small family businesses in the economy and society of any country (Sharma, 2004) as well as the creation of knowledge that is producing this important type of enterprise (Brouthers, Andriessen & Nicoleas, 1998; Richbell, Watts & Wardle, 2006; Le Breton-Miller & Miller, 2008). There is mostly an increasing interest in two transcendental topics: the analysis of the level of entrepreneurship of small family businesses and the importance of innovation activities (Kraus, Pohjola & Koponen, 2012) since innovation activities have been acknowledged in the literature as a way to exploit the new opportunities that the market offers to improve the results of enterprises (Zahra, 2005; Craig & Moores, 2006; Naldi, Nordqvist, Sjoberg & Wklund, 2007; Kellermanns, Eddleston, Sarathe & Murohy, 2012).

In this regard, there are few published investigations in the current literature that have explored the importance of the adoption of innovation activities inside small family businesses (Litz & Kleysen, 2001; Gudmundson, Hartman & Tower, 2003; Craig & Dibrell, 2006; Kellermanns & Eddleston, 2006; Craig & Moores, 2006; McAdam, Reid & Mitchell, 2010; Kellermanns *et al.*, 2012) although this topic has increased its publication because of the special edition that the Journal of Small Business Economics dedicated to the analysis and discussion of entrepreneurship of family businesses and particularly the importance of innovation in this type of enterprise (Kellermanns *et al.*, 2012).

Additionally, there is theoretical and empirical evidence in the current literature of business and management sciences that establishes the presence of significant differences in the adoption of innovation activities between family businesses and those who are not family-owned (Kraus *et al.*, 2012) and these differences are emphasized even more when a comparison is made between small family businesses and bigger family businesses (Brines *et al.*, 2013). This is why Sharma and Salvato (2011: 1200) made the following question: *“What factors are the ones that influence more in family businesses so they adopt and implement as soon as possible the innovation activities?”*

Several researchers, scholars and professionals have tried to answer this question by means of the enterprise orientation (Nordqvist, Habbershon, & Melin, 2008; Zellweger, Muhlebach & Sieger, 2010), of the resources and skills that family business have in order to create or inhibit entrepreneurship and innovation activities (Sirmon & Hitt, 2003) and of the effects of the notion of family business that managers or owners have about them (Dyer, 2006; Habbershon, 2006). However, according to Habbershon, Williams and MacMillan (2003) as well as Habbershon (2006), the social capital created by the notion of the manager or owner of the family business will be the transcendental element for the entrepreneurial behavior and the innovation capacity of the family business.

In a more recent investigation, Patel and Fiet (2011) concluded that family businesses have particularly a lot

more advantages than those that are not family-owned regarding the exploitation of new opportunities provided by an increasingly globalized and competitive market. This is because of the same characteristics that this type of enterprises has such as the long-term orientation of the control from the family, the scarce rotation of staff and managers, the ease of making decisions from managers or owners and the replacement of executives (Patel & Fiet, 2011). This allows family businesses, especially the small ones, to create a working environment and dynamic that favors the adoption of innovation activities (Brines *et al.*, 2013).

In this regard, the family business is the most dominant industry in any country of the world, but it is specifically bigger in developing and emerging economy countries (La Porta, López-de-Salinas & Shleifer, 1999) since it is precisely this type of countries where family businesses take the form of small family enterprises which provide employment to thousands of workers and employees. These businesses also contribute more to the development of economy and society (Lodh *et al.*, 2014). Consequently, several investigations have proved that over a third of the 500 most important enterprises in S&P ranking (Anderson & Reeb, 2003) and the top 500 enterprises of the ranking of Fortune (Shleifer & Vishny, 1986) are precisely family businesses.

Furthermore, the structure of the companies in the emerging and developing countries is usually through the control of a specific family (Manikutty, 2000). This can have effects that are particularly positive and significant in innovation activities because family businesses have precisely different advantages in comparison to other types of enterprises such as the control of investment in research and development activities, the achievement of economies of scale, the control of management from a person, a fast decision-making and the change to the adjustment of products to the needs and demand of the market. These are some of the essential elements to achieve a more efficient and effective adoption and implementation of innovation activities (Lodh *et al.*, 2014).

Nonetheless, it has been established in the literature that small family businesses usually have several problems of stakes among the family members that have control of the enterprise (La Porta *et al.*, 1999). But then again it also has been proved that the leadership of the owner or manager of the enterprise, commonly the father of the family who has the control of the business, is essential so the organizations is in better conditions to adopt innovation activities by making all the family members to work as a team not only to decrease the organization problems but also to optimize in the best possible way the human, economic and financial resources to increase the innovation activities (Belloc, 2012).

Similarly, it has also been established in the literature that family businesses have several advantages. The most important one is the control of the company by one family because it can involve the whole family in the activities of the organization, especially when the manager or owner of the business has made the decision of adopting innovation activities. This allows enterprises to achieve a higher level of growth, increase their level of technological innovation, improve their market position, increase significantly their business return and survive in the market in which they participate for a long period of time (Anderson & Reeb, 2003; Le Breton-Miller *et al.*, 2011).

In a similar trend, some studies published in the current literature, which have focused in small family businesses of countries with emerging economies, have found out in general terms that the knowledge and the investment in research and development promote and increase significantly the innovation activities of enterprises. Accordingly, an important percentage of these small family businesses tend to invest a higher amount of economic resources when they obtain satisfactory results with the adoption of innovation activities (Block, 2012). However, Simon *et al.* (2008) concluded that when family businesses use a higher percentage of investment in activities of investment and development, they achieve a high level of business return which is similar to those enterprises that are not family-owned but the level of innovation decreases depending on the fact that the manager or owner of the business can involve the whole family in the organization.

In a different research, Kim *et al.* (2008) found out that when the family members get involved more in the organization, there are higher possibilities of increasing the investment in research and development projects in the long term in comparison to enterprises that are not family-owned. On the other hand, Ayyagari, Demirgüç-Kunt and Maksimovic (2011) analyzed 19,000 family businesses from 47 developing countries and concluded that family enterprises achieve better results in their innovation activities when the family members get involved in both decision-making and the development of such innovation activities.

In this regard, the working dynamic and involvement of the family members in the organization, combined with the resources and skills that small family businesses have, produce different characteristics that can differentiate this type of enterprises from the others (Chua, Chrisman & Sharma, 1999; Astrachan, 2010) creating with these higher levels of innovation (Brines *et al.*, 2013). Thus, the combination of family with the small enterprise creates a positive and significant influence in the innovation of products, processes and management systems (Litz &

Kleysen, 2001; Salvato, 2004; Zahra, 2005; Kellermanns *et al.*, 2008) since the innovation in products, processes and management systems carried out by small family businesses decrease significantly production costs which can help to increase the price of new products that are obtained by clients and consumers (Cohen & Klepper, 1996).

For this reason, the structure of the family business will be an important element that will determine, on one hand, the entrepreneurial activities (Cramer, 2002) and, on the other hand, the innovation activities in products, processes and management systems (Lee & O'Neill, 2003; Lima, 2010). Consequently, the innovation in small family businesses is the result of the creation of new ideas of the family (Emmendoerfer & Halal, 2008), which produce more and better results in the innovation activities in products, processes and management systems (Brines *et al.*, 2013; Lodh *et al.*, 2014). Therefore, considering the information presented above it is possible to state at this point the following hypotheses:

H1: The higher the innovation in products, the higher the level of innovation activities

H2: The higher the innovation in processes, the higher the level of innovation activities

H3: The higher the innovation in management systems, the higher the level of innovation activities

2.1 Sampling Procedures

In order to answer the stated hypotheses, an empirical research was made by taking into consideration the small family businesses located in Aguascalientes State (Mexico) by using the 2014 directory of the Sistema de Información Empresarial Mexicano (System of Mexican Business Information, or SIEM) as a reference framework. The directory had a total of 7,662 registered enterprises and the ones considered for the research were those that had between 5 and 250 workers (1,342 enterprises) which produced a sample of 400 enterprises that represented slightly over 30% of all the enterprises. Similarly, a questionnaire was applied as a personal interview to managers of a sample of 400 SMEs that were selected randomly with a maximum error of $\pm 4.5\%$ and a reliability level of 95%. From all the questionnaires obtained, 296 are considered as small family businesses and 104 as not family-owned enterprises so the final sample for this research was 296 family businesses.

2.2 Measures and Covariates

In order to measure the innovation activities, managers were asked to indicate if the enterprise had carried out innovation activities in the last two years. To measure the importance of the innovations, the managers were asked to evaluate the innovation in products, processes and management systems by using seven items measured by means of a five-point Likert scale (from 1 = not important at all to 5 = very important as its limits) that was adapted from Zahra and Covin (1993), Kalantaridis and Pheby (1999), Frishammar and Hörte (2005) as well as Madrid-Guijarro, García and Van Auken (2009).

Additionally, in order to evaluate reliability and validity of the scale of innovation, a Factorial Correspondence Analysis (FCA) of second order was carried out by using the method of maximum likelihood with the software EQS 6.1 (Bentler, 2005; Brown, 2006; Byrne, 2006). The reliability of the scale was evaluated by means of Cronbach's alpha and the Composite Reliability Index (CRI) proposed by Bagozzi & Yi (1988). The results obtained are shown in Table 1 and they indicate that the model has a good adjustment of data ($S-BX^2 = 10.832$; $df = 8$; $p = 0.000$; $NFI = 0.991$; $NNFI = 0.995$; $CFI = 0.998$; $RMSEA = 0.032$) and the values of both Cronbach's alpha and the CRI are above 0.7 which provides evidence of reliability and it justifies the internal reliability of the scale of the theoretical model (Nunally & Bernstein, 1994; Hair *et al.*, 1995).

Table 1. Internal consistency and convergent validity of the theoretical model

Variable	Indicator	Factorial Loading	Robust t-Value	Cronbach's Alpha	CRI	EVI
Product Innovation (F1)	INS1	0.910***	1.000 ^a	0.842	0.843	0.730
	INS2	0.795***	17.929			
Process Innovation (F2)	INP1	0.849***	1.000 ^a	0.768	0.770	0.628
	INP2	0.728***	16.519			
Management System Innovation (F3)	ISG1	0.734***	1.000 ^a	0.851	0.852	0.659
	ISG2	0.796***	13.616			
	ISG3	0.897***	15.385			
Innovation Activities	F1	0.998***	12.530	0.918	0.919	0.797
	F2	0.990***	11.204			
	F3	0.643***	9.186			

$S-BX^2$ (df = 8) = 10.382; $p < 0.000$; $NFI = 0.991$; $NNFI = 0.995$; $CFI = 0.998$; $RMSEA = 0.032$

^a = Constrained parameters to such value in the identification process

*** = $p < 0.01$

The results of second order of the AFC indicate that all items of the related factors are significant as evidence of the convergent validity ($p < 0.01$). The size of all the standardized factorial loads are above 0.60 (Bagozzi & Yi, 1988) and the Extracted Variance Index (EVI) of each pair of constructs of the theoretical model has a value above 0.50 as it has been established by Fornell & Larcker (1981). These values indicate that the theoretical model has a good adjustment of data.

3. Results

A model of structural equations of second order was used in order to answer the hypotheses stated in this research paper by using the software EQS 6.1 (Bentler, 2005; Brown, 2006; Byrne, 2006). Moreover, the nomological validity was analyzed through the square Chi test which was used on the comparison of the results obtained between the theoretical model and the measurement model; the results were not significant which provides an explanation of the relations observed between the latent constructs (Anderson & Gerbing, 1988; Hatcher, 1994). Table 2 shows the results obtained.

Table 2. Results of the structural equation model of the theoretical model

Hypothesis	Structural Relationship	Standardized Coefficient	Robust t-Value
H1: Higher product innovation, higher innovation activities.	Product Inn. → Innovation A.	0.998***	12.530
H2: Higher process innovation, higher innovation activities.	Process Inn. → Innovation A.	0.990***	11.204
H3: Higher management system innovation, higher innovation activities.	Management S.I. → Innovation A.	0.643***	9.186

$$S-BX^2 (df = 8) = 10.382; p < 0.000; NFI = 0.991; NNFI = 0.995; CFI = 0.998; RMSEA = 0.032$$

*** = $P < 0.01$

The results obtained from the implementation of the model of structural equations of second order are presented in Table 2. These results indicate that, regarding hypothesis **H₁** ($\beta = 0.998$, $p < 0.01$), the innovation in products is a good indicator for the measurement of the innovation activities of family SMEs. Regarding the second hypothesis **H₂**, the results obtained ($\beta = 0.990$, $p < 0.01$) show that the innovation in processes is also a good indicator for the measurement of innovation activities. Regarding the third and last hypothesis stated **H₃**, the results obtained ($\beta = 0.643$, $p < 0.01$) indicate that, similarly to the other ones, the innovation in management systems is also an excellent indicator for the measurement of the innovation activities. In conclusion, it is possible to assert that the innovation activities in products, processes and management systems are three essential indicators to measure the innovation activities in family SMEs.

4. Discussion

The results obtained in this empirical research allow us to conclude in three main aspects. Firstly, the innovation in products made by family businesses is more significant than the other two types of innovation. This means that the small family enterprises are more concerned and focused in the adoption and implementation of innovation activities in products which can be understandable if we consider that the markets where they participate this type of organizations are increasingly more globalized and competitive. This implies that family enterprises have to make substantial changes or improvements to their products and even create or develop new products not only to stay in the markets but also to survive in them.

Secondly, it is also possible to conclude that once the products have been improved or new ones have been created, small family enterprises can now focus in the improvement of the production processes of their products since the changes, improvements or the creation of new products require an adaptation of the processes to improve significantly their production. Otherwise, if small family enterprises do not have the capacity to improve their production processes, then the costs of creating new products or improved ones will increase significantly. This can reduce greatly not only the level of sales of the organization but also the results obtained, including the level of growth and the business return.

Thirdly, it is possible to conclude that once the small family businesses have improved or created new products and have made the corresponding and necessary changes or improvements in their products, then managers have the means to implement management systems of innovation activities. This is logical since it is not possible to manage innovation of new products when they have not been made yet, but it is also important to notice that this is the weakest innovation activity in small family enterprises since this type of organizations have not been able to manage their innovations adequately. This is because most of the family enterprises do not copy right the intellectual property of their innovations, allowing with this that their main competitors copy their innovations.

On the other hand, the results obtained in this empirical research contain a series of implications for those small family enterprises that have decided to adopt and implement innovation activities. Therefore, managers have to take care of the changes or improvements of the existing products in the enterprise or the creation of new products as well as the change or improvement of the production processes of new or improved products and their management systems. Otherwise, if they only focus in the improvement or development of new products, then it will be very complicated that small family businesses can obtain the expected results and bigger competitive advantages than their main competitors.

In this regard, managers of small family businesses will have to give the same importance to the three innovation activities because if they make the changes or improvements to existing or new products then they will have to work in the changes or improvements in the production processes of the new or improved products. In addition, managers of enterprises have to design management schemes of new products. If it is not possible to work simultaneously with the three innovation activities then the results that the small family enterprises can obtain will hardly have the expected impact in the significant improvement in the level of sales, the level of competitiveness and the level of business return.

Moreover, for the implementation of innovation activities to have the expected results by the managers they have to create the necessary conditions inside the organizations to have a working environment that promotes and values the creation and development of new ideas, not only to improve or create new products but also for the improvement of all the operational and management processes. The development of these actions will make a change in the cultural organization of small family businesses because it is not possible to implement innovation activities in enterprises that have a traditional culture. It is necessary a change in the organization and create an innovative culture where executives, employees and workers of small enterprises are willing to work together and share ideas and skills to improve significantly the organization.

Finally, if small family enterprises want to achieve a change in their organizational culture it will be necessary that the executives develop and implement a formal and informal training program for all the staff of the company as it will be very important that both employees and workers have an adequate training to work as a team, share their knowledge, skills and experience. In this way, new knowledge could be created inside the organization and it could be used not only in the improvement or creation of new products that is demanded by the market where this type of enterprises participate but also in the improvement or creation of production processes and management systems needed for these products.

Additionally, this empirical research has a series of limitations that are important to consider. Thus, the first limitation is the one regarding the sample as only the small family businesses that had between five and 250 workers were considered. That is why future investigations will have to consider those enterprises with less than five workers that represent more than 60% of small and medium-sized enterprises in Mexico in order to confirm the results obtained. The second limitation is that the questionnaire to collect the data was applied only to small family businesses in the state of Aguascalientes; future researches will need to apply it other states of the country and even other countries in order to verify if the results obtained are similar.

A third limitation is the scale used to measure the innovation activities since only three dimensions or factors (innovation in products, processes and management systems) and seven items were considered for the measurement. The following investigations will need to use other scales with different dimensions to confirm the results obtained. A fourth limitation is that only qualitative variables were considered to measure the innovation activities so in the future it will be necessary to use quantitative variables such as the quantity of registered products or the investment made in research and development to prove if there are any significant differences in the results obtained.

A fifth limitation is that the instrument to collect data was applied only to the managers of small family businesses. This created the assumption in the research paper that these executives had the general knowledge about innovation activities that the organization carried out in the last two years. Future research will need to apply the same questionnaire to the staff members of the enterprises and the consumers in order to confirm the results obtained. Finally, the last limitation is that high percentage of small family businesses considered that the information requested was confidential so the results obtained do not necessarily reflect the reality that this type of enterprises have.

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Determining Antecedent of Re-Purchase Intention: The Role of Perceived Value and Consumer's Interest Factor

Yesim Can¹, Oya Erdil¹

¹Faculty of Business Administration, Gebze Technical University, Turkey

Correspondence: Yesim Can, Faculty of Business Administration, Gebze Technical University, Turkey.

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Abstract

With the widespread use of smartphones, strategic marketing of smartphones has become the focus of related brands. Although creating brand loyalty is an important factor of global strategic marketing and re-purchase intention, little research investigated the antecedent of smartphone's brand loyalty and repurchase intention. The purposes of this study are to investigate what are the antecedent brand loyalty and re-purchase intention in smartphone marketing. In the light of the literature and for this purpose; the effects of perceived value factor (perceived ease of use, perceived irreplaceability), utilitarian factor (system quality), hedonic factor (visual design), and consumer's interest factor (technology consciousness) on brand loyalty and repurchase intention were investigated in an integrated model. The results of the analysis show that smartphone's re-purchase intention is largely determined by brand loyalty, perceived ease of use, perceived irreplaceability, system quality, visual design, and technology consciousness. Moreover, analysis results demonstrate that perceived irreplaceability, system quality, and visual design affect brand loyalty.

Keywords: brand loyalty, re-purchase intention, smartphone, technology consciousness, perceived ease of use, perceived irreplaceability, system quality, visual design

1. Introduction

With the development of technology, there has been a rapid increase in the use of smartphones all over the world. A smartphone is not just a mobile phone in the lives of consumers; it is also involved in different uses in daily life. Consumers have begun to carry out activities that can be performed on the computer with the smartphone besides the functions of calling and sending messages. For example, it enables the user sending and receiving emails, supplies camera with the data storage capacity, provides internet access (Pitt et al., 2011). In recent years, in addition to these features, with the widespread use of social media, the ability to use social media has increased the importance and demand for smartphones. At the same time, consumers are not only using the smartphone to satisfy their utilitarian needs (making a call, sending a message) but also to satisfies their hedonic needs (gaining a status). The smartphone must satisfy both types of needs in order to meet consumer expectations.

For a long time, brands have focused on to sustain competitive advantage and increase sales. In order to reach these goals in the long term, brands must be able to understand and respond to the changing demands and needs of the consumer (Webster, 1992). To achieve sustainable competitive advantage and increase sales, brands are implementing various strategies. In this perspective, it has become increasingly important to establish brand loyalty in the consumer (Hallowell, 1996). With previous research, the effect of brand loyalty on the re-purchase intention has been revealed (Dick & Basu, 1994). Brands that want to maintain their sales and gain competitive advantage have entered into efforts to establish brand loyalty in the consumer. Moreover, brand loyalty in the previous studies of the service sector has been shown as one of the most important factors that generate advantages against competitors (Bharadwaj et al., 1993).

Smartphone use by consumers is growing rapidly. Turkey is one of the countries with the highest usage of smartphones. The high usage of smartphones in Turkey can be attributed to the high young population (Bayraktar et al., 2012). This widespread use offers new opportunities for marketers to meet customer needs (Persaud & Azhar, 2012). Despite its ever-increasing use and great importance, there are still few studies explaining the antecedent of brand loyalty and re-purchase intention, which affect consumers' smartphone purchasing process (Filieri & Lin, 2016; Kim et al., 2014). Brand loyalty and re-purchase intention show the idea

of repeating purchase after the adoption of the technology and consistent use of the customer (Bhattacharjee, 2001). Although the increasing importance of smartphone, there is a scarce study in this field in Turkey. Moreover existing studies offers significant insights to understand which factors important in using smartphone, they do not shed light on consumer's interest factor in a holistic model. Furthermore, generally their study center upon a single point of view such as usability (Lee et al., 2015), luxuriousness and attractiveness (Hong et al., 2008), device features (Kim et al., 2016), mobile phone brands (Bayraktar et al., 2012) and technology consciousness has not been adapted as a factor in smartphone marketing. Therefore, technology consciousness with an integrated holistic perspective is a gap in the literature. We aim to fill these gaps and to propose a comprehensive model that enriches the point of view. In this light perspective, the main purpose of this study is to investigate the antecedent of brand loyalty and re-purchase intention in existing smartphone marketing with a holistic model of integrated consumer's interest factor.

We conducted a research to fill the gap in the literature due to the lack of research in the field of smartphone marketing in Turkey. We conducted preliminary research with 10 ungraduated student to identify the factors that are important for smartphone users in Turkey and to develop a new model. We made face-to-face interviews for this purpose and identified the leading factors by using literature studies. Preliminary study and literature research revealed five important factors that are considered to have an effect on brand loyalty and re-purchase intention: perceived ease of use, perceived irreplaceability, system quality, visual design, and technology consciousness.

This research contributes to the literature in three different ways. Firstly, this study presents a different perspective and model by contributing to the small number of studies conducted on consumers' smartphone purchasing processes. Secondly, the results of this study provide useful insight to brands, especially smartphone brands who seek to grow with the global international marketing strategy. Finally, this study has contributed the literature by deriving the concept of technology consciousness from the fashion consciousness where technology consciousness refers to consumer's sensitivity to changing technology.

2. Theoretical Background

2.1 *Technology Adoption Theories and Use of Smartphone*

Today, technology is constantly evolving and renewing. Users can be reluctant to accept and use new technological products. Owing to the importance of this problem, user adopted technology has been a long-standing issue and a lot of research have been conducted to understand what factors influence new technologies adoption and how it can be possible to adopt new technologies. Current studies are explaining technology adoption by benefiting from past studies that describe consumer behavior (i.e. Davis's TAM (1989), Ajzen's TPB (1991) or Fishbein and Ajzen's TRA (1975)).

The basic assumption of TAM is that technology adoption lies in perceived values arising from the use of technology (Kim et al., 2014). According to Davis (1989), perceived ease of use and usefulness is an important factor to technology adoption model (TAM). Wang et al. (2015) added perceived enjoyment, perceived irreplaceability, and habit in use of microblogs besides these two factors, which are the two indicators of technology adoption.

According to Theory of Planned Behavior (TPB) behavioral intentions could be predicted by subjective norms, perceived behavioral control, and attitudes toward the behavior. Moreover, behavioral intentions have a direct effect on actual behavior (Ajzen, 1991). Chen et al. (2009) unified TPB and TAM to show adoption of a smartphone with the applications for the smartphone users. Furthermore, they found that perceived usefulness and ease of use effects attitude toward the use of a smartphone.

There is no agreement on the definition of 'smart' phone, but there is a consensus that smartphone is more than a merely mobile or cellular phone. A smartphone is not only provides a call for and sends a message to but also provides an online access, checks emails and other possibilities such as camera and video. (Pitt et al., 2011). Furthermore, smartphone unifies mobile and computing technologies (Filiari & Lin, 2016) and the most important feature separating it from existing phone is that smartphone provides with installing and running more advanced applications (Kim et al., 2015).

Nowadays, in the smartphone market, there are many brands (Pitt et al., 2011). Smartphones are suddenly reforming competition in mobile phone marketing (Kim et al., 2015). These important developments factors have become the focus of marketing researchers, whereby they have begun to analyze the determinant of smartphone's brand loyalty (Kim et al., 2016; Yeh et al., 2016; Reuver et al., 2015; Shin, 2015) and the antecedents of (re)purchase intention of smartphone (Filiari & Lin, 2016; Rahim et al., 2016). Moreover,

diversified research has integrated technology adoption theories with smartphone use to analyze smartphone user's behavior and intention. According to Filieri and Lin (2016), TAM has been considerably adopted to clarify new technologies adoption. Thereby, it is an important factor adoption of smartphone usage.

2.2 Brand Loyalty

Brand loyalty can be defined as having a positive attitude toward the brand and continuing to purchase regularly in the long-term. Brand-loyal customers are more price sensitive. Consumers who have a commitment to the brand can pay more for the products (Shin, 2015). This gives the brand a great advantage. For brands, to constitute brand loyalty is an important objective for strategic marketing and it provides brands with sustainable competitive advantage (Dick & Basu, 1994). Furthermore, cost of keeping existing customers is less than gaining new customers and it can be accomplished by creating brand loyalty (Kim et al., 2016).

A diversity of research has been conducted to investigate the antecedent and the reason for brand loyalty. Two viewpoints have attracted attention: consumer value theory and consumer-brand identification (Yeh, et al., 2016). Firstly, consumer value theory puts forward that consumer's value perception and evaluation of the product is an important antecedent of brand loyalty. This evaluation can be occurring after or during product use (Parasuraman, 1997). If the consumers perceive a high value for the brand, they can be loyal. At the same time, consumer value leads consumers re-purchase behavior (Kim et al., 2016). According to Yang and Petersson (2004), a high value is motivating brand loyalty. On the other hand, a value is based on equity theory. According to equity theory, for the generation of high-value perception, the ratio of the consumer's outcome/input can be high. Namely, consumers should believe that the result is higher than the effort they spend.

Secondly, consumer-brand identification is an important antecedent of brand loyalty. Consumer-brand identification was defined as the perception to integrate brand identity and the consumer's own self-concept. Marketing administrators are seeking to establish on their customers. Therefore, understanding the relationship between brands and consumers is important (Elbedweihy et al., 2016). Prior research has found that the need for self-esteem and the need for self-consistency are the motivators for consumer-brand identification. Consumers conclude that the use of the brand will be higher when it meets their need for self-esteem and if the brand-users image and the consumer's ideal self-image is integrated higher. Another motivator for consumer-brand identification is the need for self-consistency that motives consumers to behave in ways coherent with their actual self because consumers have beliefs about their habits, lifestyles, and identities (Kressmann et al., 2006).

According to Jones and Sasser (1995), customer loyalty is divided into two categories as short-term and long-term loyalty. Short-term loyalty has less insistence to change products with alternatives. On the other hand, long-term loyalty has strong resistance to change products with alternatives. In fact, in long-term loyal customers don't change brand easily which they generally use the brand's product. Therefore, constituting a long-term loyalty is important for brand's strategic marketing planning (Kotler, 1984). Furthermore, brand loyalty motivates consumers to repeat purchase (Tho et al., 2017).

2.3 Re-Purchase Intention

Re-purchase intention refers to continued use or purchase after the adoption of a technology (Filieri & Lin, 2016). Bhattacharjee (2001) studied the Model of Information Systems (IS) Continuance to clarify post-adoption behavior. Although firstly approval of any information systems is a major step to discern IS success, sustaining of an IS is hooked on its continued usage. Therefore, the achievement of an IS depends on consumer's loyalty (Lin & Ong, 2010).

The IS continuance studies can be divided into two categories: static-type models and process-type models. Static-type models can be based on Ajzen's (1991) theory of planned behavior (TPB) or David's technology acceptance model (TAM) which explains consumer intention and behavior. Process-type models can be based on Oliver's (1980) expectation-confirmation theory (ECT) or Bhattacharjee's (2001) ISC model, which shows feedback process. In fact, the most popular model explaining IS continuance is ISC model. The model explains users' intentions to continue to use with benefiting perceived usefulness, confirmation and satisfaction (Lin & Ong, 2010). After the first use, consumer's satisfaction or cognitive beliefs might change and it can lead to repeated behaviors or the exact opposite (Filieri & Lin, 2016).

According to Filieri and Lin (2016), the IS continuance model neglects another motivation of consumers to use technology product, but it is the hedonic aspect of consumption that motivates consumers. In hedonic consumption, emotions, affects, attitudes and satisfaction are directly influenced by the choice of consumption (Moore, 2015). When thinking of smartphones use, visual design (appearance), interpersonal influence or reference groups effects can be the main foundation for purchase intention in the smartphone market.

Although a wide range of research has been conducted on re-purchase intention, there is still very few researches discussing re-purchase intention of smartphone consumers. Moreover, most of the existing research has neglected technological consciousness that can be influential on re-purchase intention just like the relationship between fashion consciousness and consumption (Lertwannawit & Mandhachitara, 2012).

3. Conceptual Framework and Hypotheses

3.1 Perceived Value Factor

The concept of perceived value is based on equity theory. The consumer is aiming for the value of the product, which he/she obtains (Oliver & DeSarbo, 1988). Perceived value factor is the consumer's general evaluation of the value of a product, which is based on consumer's perceptions (Zeithaml, 1988). Generally looked at by the consumers, a product or brand that has superior attributes than other alternative is selected, because it is expected that product performance had better satisfy consumers' needs (Yeh et al., 2016). Consumers tend to prefer products with high-perceived value. Therefore, companies should focus firstly on perceived value. (Yang & Petersson, 2004).

3.1.1 Perceived Ease of Use

Perceived Ease of Use (PEU) is defined as the use of technology by the individual without too much effort (Hamid et al., 2016). When consumer acceptance or rejection of technologies is largely influenced by PEU, then it influences consumer's behavioral intention either directly or indirectly (Jackson et al., 1997). But it directly affects consumer's attitude towards use (Liu & Yu, 2017) and intention to use (Abdullah et al., 2016). It can be said that PEU is a key component of technology adoption (Ozturk et al., 2016). Moreover, perceived ease of use is especially important as ways of measuring consumer's satisfaction (Davis, 1989).

Within the context of this study, PEU refers to the extent that users believe that their use of smartphone has not been required too much effort. If the smartphone is easy to use, consumers will be brand loyal and intend to re-purchase. Studies indicate that perceived ease of use is positively associated with re-purchase intention (Chiu & Wang, 2008). However, the effect on brand loyalty is the one that is missing in the literature. Therefore, we hypothesize that:

H1a: Perceived ease of use will be positively related to brand loyalty.

H1b: Perceived ease of use will be positively related with re-purchase intention.

3.1.2 Perceived Irreplaceability

Perceived irreplaceability is based on a perception of the unique usefulness, which causes individual's habitual behavior. The perceived irreplaceability that causes the individual's dependence (Young, 1999) at the same time is important in meeting and satisfying consumer's needs. When consumers believe that 'this product is irreplaceable', they do not want to replace it with another product. Because they feel that the product has a unique value, believe that the product cannot be replaced even with an alike product (Grayson & Shulman, 2000), and suspend its replacement (Schifferstein & Zwartkruis-Pelgrim, 2008). From a consumer standpoint, although there is not enough study in the literature, perceived irreplaceability and its effect are gaining importance. Pedeliento et al. (2016) empirically showed that there is a positive relationship between product irreplaceability and brand loyalty. They applied a research on the drivers in the field of industry. Because of the limited amount of research about perceived irreplaceability, by changing the application of research for in smartphone marketing, this research tests for the existence of a positive relationship between perceived irreplaceability and brand loyalty. Moreover, whether the effect of perceived irreplaceability on re-purchase intention exists can be hypothesized as follows:

H2a: Perceived ease of use will be positively related to brand loyalty.

H2b: Perceived ease of use will be positively related with re-purchase intention.

3.2 Utilitarian Factor

Utilitarian factor could be explained with a total evaluation of functional benefits. In terms of utilitarian factor, consumers behave rationally in general (Ozturk et al., 2016) and they want to purchase products without losing time (Chung, 2015). Utilitarian factor derives from consumer's experience of a product (Katz, 1960). Moreover, according to utilitarian factor, the consumer tends to re-purchase the products when they are satisfied with as a result of their use. Furthermore, when the brand is seen as a value, the utilitarian factor leads to brand loyalty (Russell-Bennett et al., 2013).

3.2.1 System Quality

System quality was understood as a consumer evaluation of system performance when satisfying the needs (Shin, 2009). When consumers are having trouble with the system (for example; lack of access or continuous attachment in the system) they are unwilling to use a smartphone (Suki, 2012).

In this research, system quality can be defined as a smartphone's physical characteristic, which enriches consumer's perception. System quality is the antecedent of efficient constructs (DeLone & McLean, 2003). Shin (2015) examined the effect of system quality on hedonicity, the utility of smartphone and customer satisfaction. The empirical findings showed that there is a positive effect of system quality on hedonicity, the utility of smartphone and customer satisfaction.

Diverse research showed the relationship between system quality and customer satisfaction and continuance intention to use (i.e. Lee & Lin (2005), Jeong & Jang (2010), Kim et al. (2015) and Lee et al. (2010)). In line with these studies, we propose the following hypotheses:

H3a: System quality will be positively related to brand loyalty.

H3b: System quality will be positively related with re-purchase intention.

3.3 Hedonic Factor

Consumers do not always buy a product thinking it will only benefit. Sometimes the consumer's purchasing of the product can be emotional and sensory. Hedonic factor refers to consumer's purchase decisions with emotional and sensory reasons (Moore, 2015) and affects the attitude, preference, and satisfaction of the consumer (Khan et al., 2005).

3.3.1 Visual Design

Visual Design is the aesthetic quality of a product (Kim et al, 2016) and it has a great importance for consumer preference. Various research has been conducted to investigate the effect of visual designs for diversity product types such as electronic products, mobile phones, cars etc. (Han et al., 2000; Hong et al., 2008; Yun et al., 2001). It can be concluded that visual design can influence consumers' behaviors.

The consumer is more likely to be influenced by visual characteristics when they are unstable. (Kahn, 2016). According to Milosavljevic et al. (2012) when consumers are hesitant among similar products, they prefer the visually appealing product. Moreover, Kim et al (2016) found that visual design affects customer satisfaction. In line with these studies, we proposed the relationship between visual design and brand loyalty and repurchase intention.

H4a: Visual Design will be positively related to brand loyalty.

H4b: Visual Design will be positively related with re-purchase intention.

3.4 Consumer's Interest Factor

In this study, the consumer's interest factor describes the individual awareness that the consumer is interested in. When we look at the fashion studies, it can be defined as 'fashion consumers are the individuals of interest.' (Han et al., 2016). In line with this perspective and by thinking the relationship between consciousness and purchase intention (Lin et al., 2015), it can be said that technology consciousness is a consumer's interest factor.

3.4.1 Technology Consciousness

The rapid development of technology has increased the competition between brands selling technology products. Brands are constantly innovating in their products in order to adapt to the dynamic market structure (Ince et al., 2016). Brands have gained a sustainable competitive advantage by innovating their products or adding different features to their products (Guan & Ma, 2003).

Technology has a constantly changing structure, just like fashion. Consumers receive the latest model of a product to follow the technology (Miller et al., 1993). The ever-changing fashion and innovations in the product evoke the desire to have the best consumer and the latest model. The consumer feels unsatisfied and unhappy when he does not have the best and the latest model (Firat, 1991; Lertwannawit & Mandhachitara, 2012). Therefore, brands are trying to satisfy the unending newness demand of consumers by making technological innovation in their products (similar to fashion products) (Barnes & Lea-Greenwood, 2006).

In this study, technology consciousness, which derives from fashion consciousness, is an equivalent to technological involvement. Consumers whose consciousness of technology is high have solely the desire for and adoption of up-to-date styles (Walsh et al., 2001) and affects consumer's lifestyle, purchase decision and

behavior (Lee et al., 2009). People who are highly technology conscious may pay more attention to the image portrayed by brands that add innovation to their products.

The effect of consciousness on purchase intention is known as previous studies (Lin et al., 2015). Lertwannawit and Mandhachitara (2012) empirically found that there is a positive relationship between fashion consciousness and status consumption. When it comes to technology products, there is a limited research on consciousness. The following hypotheses have been developed concerning the technology consciousness, brand loyalty and re-purchase intention created by looking at the technology market:

H5a: Technology consciousness will be positively related to brand loyalty.

H5b: Technology consciousness will be positively related with re-purchase intention.

3.5 Brand Loyalty and Re-Purchase Intention

Brand loyalty is a promise that consumers will repurchase their favorite brands and will not change their loyalty under whatever condition (Oliver, 1980). According to Dick and Basu (1994), brand loyalty is a key factor to constitute repeat purchase. Prior research found that brand loyalty positively influences purchase intention (Mittal et al., 1998; Das, 2014; Hennig-Thurau et al., 2002). Thus, we develop the final hypothesis of this study as follows:

H6: Brand Loyalty will be positively related to re-purchase intention.

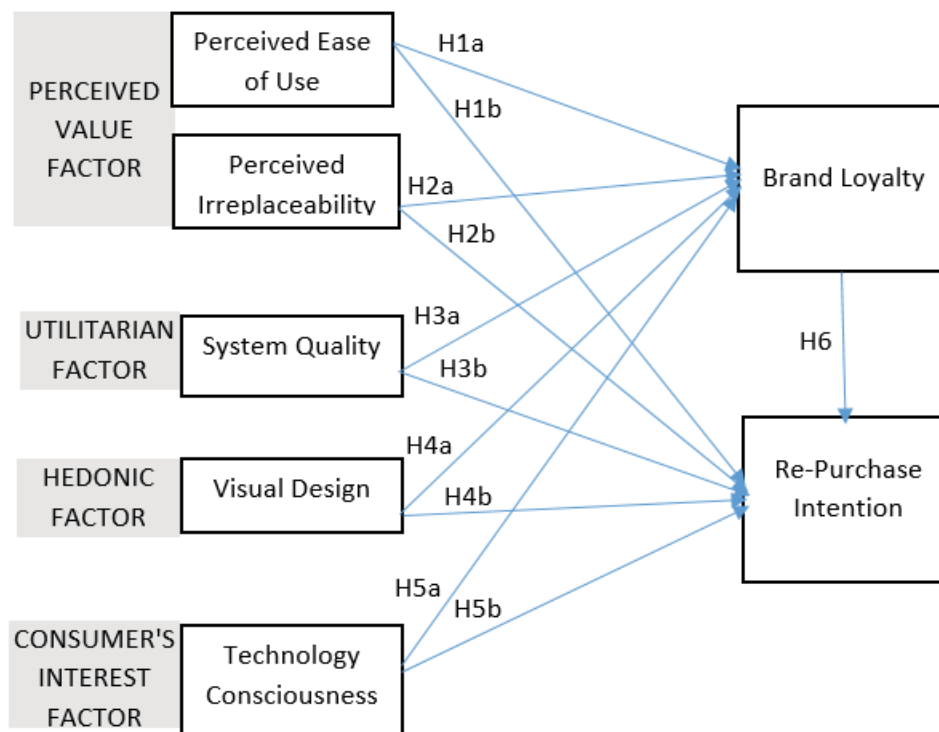


Figure 1. The Conceptual Model of the Study

4. Research Methodology

4.1 Measurement Development

The purpose of this study is to propound a new theoretical framework to clarify the linkages between brand loyalty and re-purchase intention of smartphone users. For this purpose, we have tried to determine the factors that are considered by smartphone users in Turkey in choosing smartphones by means of observation and face-to-face interviews. Ten ungraduated students has participated in preliminary research. Participants were asked the following questions: What are the important features for you on the smartphone? Why do you buy a smartphone? What attributes will you pay attention if you buy a smartphone again? Then, we compared the factors, which we obtained as a result of an interview with the existing factors given in the literature.

At the end this process; visuality, quality, easy use, uniqueness and technological innovation were found to be the leading factors. We have created hypotheses of working with the leading factors by adapting them with the

previous studies in the literature and adopted a survey to examine the hypotheses and the research model. All measurement items in the research were modified and adapted from previous research. All items were measured with Likert scales (from 1. strongly disagree to 5. strongly agree). Table 1 shows measurement items and related previous literature.

Table 1. Measurement Items

Construct	Measurement Items	Related Studies
Perceived Ease of Use	PEU1 It's easy to use my smartphone	Davis (1989), Wang, et al. (2015)
	PEU2 My smartphone is useful	
	PEU3 The use of smartphone is comprehensible and clear	
	PEU4 My smartphone is elastic to use	
Perceived Irreplaceability	PI1 I cannot find a phone to use instead of my smartphone.	Pedeliento, et al. (2016)
	PI2 I do not believe the other phone will provide the value that my smartphone I am using gives me.	
	PI3 I do not see other smartphone brands equal to the smartphone brand I use.	
	PI4 The smartphone brand I use is unique for me in other brands.	
System Quality	SQ1 The speed of my smartphone is fast.	Kim et al. (2015)
	SQ2 The brightness of my smartphone's screen and graphics are perfect.	
	SQ3 The performance of my smartphone is consistent.	
Visual Design	VD1 My smartphone looks nice.	Kim et al.2016 and Cyr et al., 2006
	VD2 My smartphone looks visually pretty.	
	VD3 The design of my smartphone is very good.	
Technology Consciousness	TC1 When the smartphone brand which I use is coming up with an upper model, it is absolutely interesting.	Lertwannawit &Mandhachitara (2012), Shim &Gehrt, (1996)
	TC2 When the smartphone brand which I use is coming up with a top model, I would like to change my smartphone to the top model.	
	TC3 I usually have the latest model of the smartphone brand I used.	
	TC4 If I see an upper model of the smartphone brand I used in another person, I would definitely notice it.	
	TC5 Technologically, the latest model of a product is important to me.	
Brand Loyalty	BL1 I think that my smartphone brand is the best for me.	Bayraktar et al., 2012 and Yeh et al. (2016)
	BL2 I say favorable things other people about my smartphone brand.	
	BL3 I suggest my smartphone brand when someone asks me my advice.	
	BL4 In the future, If I need a smartphone, the brand of smartphone, which I used first, comes to my mind.	
Re-Purchase Intention	RPI1 I would buy this brand phone again, if I were to buy a smartphone.	Fiileri & Lin (2016)
	RPI2 If I were shopping to buy a smartphone, the possibility of buying the same smartphone brand is very high.	
	RPI3 If I need a smartphone, I would be re-thinking of buying this brand smartphone.	
	RPI4 In the future, It is very likely that I will buy this smartphone brand again.	

Perceived value factor comprises of perceived ease of use and perceived irreplaceability, which is considered as an important factor in the use of the technological product (Davis, 1989; Pedeliento, et al., 2016). Perceived ease of use is measured in terms of its use, clear and understandable usage and flexible use (Davis, 1989; Wang, et al., 2015). Perceived irreplaceability is measured in terms of its uniqueness and being equal another smartphone brands (Pedeliento, et al., 2016).

Utilitarian factor consists of system quality and visual design. System quality is measured from the perspectives of smartphone's speed, consistency, screen and graphics (Kim et al., 2015). Visual design measures evaluation of smartphone appearance and looks like (Kim et al., 2016; Cyr et al., 2006).

Consumer's interest factor comprises of technology consciousness. Technology consciousness is adapted from Lertwannawit and Mandhachitara (2012) research. The term of technology consciousness is derived from fashion consciousness. Like fashions products, technological products are evolving and renewing. Brands are trying to create technology awareness by adding new technological features to their products. Technology consciousness is measured by the awareness that occurs in the consumer when the new feature is added to the product or the top model of the product is released.

Brand loyalty is measured in terms of consumer's obedience and belief that the smartphone that they use is the best. Moreover, it refers to reporting to other people and making suggestions (Bayraktar et al., 2012; Yeh et al., 2016). Re-purchase intention attributes to consumer's thinking of again purchase decisions of smartphone (Fileri & Lin, 2016).

4.2 Sample

According to a survey conducted by Pew Research Center (2016), the rate of smartphone usage in Turkey between the ages of 18 and 34 is 93 percent. This research shows that the vast majority of young people use smartphones. For this reason, we have chosen the sample as all the students who are educated at the university and who use smartphones. We applied the research to undergraduate, graduate and doctoral students. We collected data from 273 students who were in college and were at +18 years of age.

Table 2 shows the respondents' demographic characteristics. The sample comprises 53.5% males and 46.5% females and their ages are ranged from 18 to 52. The majority age of respondents was in the 18-25 range of age. About 44% of the respondents are in Bachelor, and 39.6% are in Master and 16.8% are Doctoral students. When we look at Table 2, we see that the majority of the sample uses iPhone (approximately 44%). Samsung is ranked second (30%), followed by LG (10.3%).

Table 2. Demographics of Respondents (n=273)

Attribute	Categories	#	%	Attribute	Categories	#	%
Gender	Male	146	53.5	Income	<1.000 TL	106	38.8
	Female	127	46.5		1.001-3.000 TL	56	20.5
Age	18-25	132	48.4		3.001-5.000 TL	67	24.5
	26-33	100	36.6		5.001-7.000 TL	21	7.7
	34-41	33	12.1		>7.001 TL	21	7.7
	42-49	7	2.6	Smartphone Brand	Phone	119	43.6
	>50	1	0.4		Samsung	83	30.4
Marital Status	Single	197	72.2		LG	28	10.3
	Married	76	27.8		Sony	15	5.5
Education	Bachelor	119	43.6		Asus	8	2.9
	Master	108	39.6		HTC	7	2.6
	Doctor	46	16.8	Others	13	4.7	

In addition to demographics questions and which smartphone is used, we asked that 'are the last two smartphones which you bought the same brand?' 38.1% of respondents answered that 'Yes, they are the same brand', on the other hand, 61.5% of respondents answered that 'No, they aren't the same brand.'

5. Results

5.1 Measurement Model

The research model and hypotheses were tested with structural equation model using Amos 22 and maximum likelihood procedure included all of the items: perceived ease of use, perceived irreplacability, system quality, visual design, technology consciousness, brand loyalty and repurchase intention. In order to evaluate the reliability and validity of the construct, firstly we conducted exploratory factor analysis (EFA). Then for each of the constructs in the model, we implemented confirmatory factor analysis (CFA) (Fornell & Larcker, 1981). After the model was tested, we analyzed the overall model fit and to test the hypotheses we applied path coefficient.

After discarding one item of re-purchase intention (If I were shopping to buy a smartphone, the likelihood I would purchase the same smartphone brand is very high), the complete measurement model showed satisfactory statistical fit. The proportion of the chi-square value and degrees of freedom is lower than five ($\chi^2/df = 2, 35$). The obtained result model is highly compatible with the dataset: ($\chi^2 (278) = 566,602$, CFI = 0, 94, IFI = 0, 94, TLI = 0, 93). The root means square error of approximation was below the recommended thresholds (RMSEA = 0, 06). In addition, PNFI is calculated as 0.76, which is greater than the breakpoint of 0.70. The test results show that the goodness of fit of the measurement model is acceptable. Table 3 shows the validity and reliability analysis result.

Each measurement scale was evaluated as reliable: The average variance extracted (AVE) and composite reliability (CR) of each of the constructs were over or on the same level the recommended thresholds in order of 0.6 and 0.5 (Fornell & Larcker, 1981). In addition, Cronbach's alphas ranged from a maximum of 0.95 to minimum of 0.79, which is greater than the 0.70 thresholds. In addition to the convergent validity of the variables, we checked all of the standardized parameters and they were greater than 0.50 and loaded onto the expected latent construct.

Table 3. Validity and Reliability Analysis Result

Variables	1	2	3	4	5	6	7	
Perceived Ease of Use	1	(0.72)						
Perceived Irreplaceability	2	0.06	(0.82)					
System Quality	3	0.08	0.21**	(0.84)				
Visual Design	4	0.01	0.15**	0.59**	(0.94)			
Technology Consciousness	5	0.03	0.46**	0.53	0.10	(0.71)		
Brand Loyalty	6	0.10	0.52**	0.39**	0.39**	0.39**	(0.78)	
Re-Purchase Intention	7	0.23**	0.31**	0.32**	0.33**	0.17**	0.51** (0.92)	
Mean		3.96	2.85	3.84	4.08	2.66	3.56	4.09
SD		0.61	1.07	0.85	0.97	0.98	0.83	1.27
AVE		0.51	0.67	0.70	0.88	0.50	0.61	0.85
C.R.		0.80	0.89	0.87	0.95	0.79	0.86	0.94
Cronbach's α		0.79	0.89	0.88	0.96	0.79	0.85	0.95

Later we contrasted the squared correlations for all of the pairs of latent variables and the AVEs in order to assess the discriminant validity of the constructs. It has been calculated that the square root of the AVEs for each variable is greater than the correlation of the implicit variables between the variable pairs, as proposed by Fornell and Larcker (1981). After completing these tests, it was concluded that the convergence and discriminant validity of the research scales were sufficient.

5.2 Structural Model

The proportion between the chi-square value and degrees of freedom was in a receivable field ($\chi^2/df = 2.66$) and the structural model showed a good level of fit ($\chi^2(289) = 822.308$; $p < .005$, IFI = 0,90, CFI = 0,90, RMSEA = 0,07). Table 4 shows the results for statistical tests of the research hypotheses and the structural model.

Table 4. Hypothesis Analysis Results

Path	Path Value	Result
H1a Perceived Ease of Use→ Brand Loyalty	0.06	Not supported
H1b Perceived Ease of Use→ Re-Purchase Intention	0.19*	Supported
H2a Perceived Irreplaceability→ Brand Loyalty	0.47**	Supported
H2b Perceived Irreplaceability→ Re-Purchase Intention	0.27**	Supported
H3a System Quality→ Brand Loyalty	0.22**	Supported
H3b System Quality→ Re-Purchase Intention	0.28**	Supported
H4a Visual Design→ Brand Loyalty	0.29**	Supported
H4b Visual Design→ Re-Purchase Intention	0.23**	Supported
H5a Technology Consciousness→ Brand Loyalty	0.06	Not supported
H5b Technology Consciousness→ Re-Purchase Intention	0.10*	Supported
H6 Brand Loyalty →Re-Purchase Intention	0.67**	Supported

* $p < 0,05$ ** $p < 0,01$

Findings revealed that the hypothesized relationship between perceived ease of use and brand loyalty is not supported (H1a rejected) ($\beta = 0.06$; $p > 0.05$), but the perceived ease of use is positively related with re-purchase intention ($\beta = 0.19$; $p < 0.05$). Thus, H1b is supported.

Perceived irreplaceability is positively and significantly related with both brand loyalty ($\beta = 0.47$; $p < .001$) and re-purchase intention ($\beta = 0.27$; $p < .001$). Therefore, H2a and H2b are supported.

The structural path analysis renders support for H3a and H3b: System quality is positively and significantly related to brand loyalty ($\beta = 0.22$; $p < 0.01$) and re-purchase intention ($\beta = 0.28$; $p < 0.01$). In addition, visual design has a noteworthy effect on brand loyalty ($\beta = 0.29$; $p < 0.01$) and re-purchase intention ($\beta = 0.23$; $p < 0.01$). Therefore, H4a and H4b are supported.

Finally, the hypothesized relationship between technology consciousness and brand loyalty is not supported (H5a rejected) ($\beta = 0.06$; $p > 0.05$), but technology consciousness is positively explained by the proposed antecedent of re-purchase intention ($\beta = 0.10$; $p < 0.05$). Thus, H5b is supported and the last hypothesis about the effect of brand loyalty on re-purchase intention (H6) is supported with a positive and significant degree ($\beta = 0.67$; $p < 0.01$).

6. Discussion

In this study, the effect of perceived ease of use, perceived irreplaceability, system quality, visual design, technology consciousness on brand loyalty and re-purchase intention were investigated. The results show that the model is effective in clarifying consumer' re-purchase intention antecedents in smartphone marketing. Moreover,

this study also demonstrates that there is technology consciousness for technological products just like fashion consciousness.

6.1 Conclusions and Implications

Despite increased competition and importance for technology firms, few experimental studies have been conducted especially in the smartphone market in Turkey. We used observation and individual face-to-face interview methods to determine the factors that smartphone users in Turkey are attaching as important. At the end of this process, as predecessors of brand loyalty and re-purchase intention we decided to investigate the effect of perceived ease of use, perceived irreplaceability, system quality, visual design, and technology consciousness. Analysis results have shown that the model is effective in explaining brand loyalty and repurchase intention.

This study tested the influence of perceived ease of use on brand loyalty and repurchase intention. Perceived ease of use of smartphone was found to exert influence on re-purchase intention but not on brand loyalty. Our findings have been found to be parallel with previous literature where there exists the effect of perceived ease of use on re-purchase intention (Chiu & Wang, 2008). According to Ashraf et al. (2016), perceived ease of use has an effect on purchase intention. Hamid et al. (2016) found that perceived ease of use affects the continuance intention of using the e-government services. As a parallel with these studies, in this study perceived ease of use has an effect on re-purchase intention of the smartphone. However, there is no effect on brand loyalty. In this regard, brands, which produce smartphones, should provide easy-to-use phones for consumers to comprise re-purchase intention.

Another finding of this study is that perceived irreplaceability has a significantly important effect on brand loyalty and repurchase intention. Pedeliento et al., (2016) investigated the relationship between perceived irreplaceability and brand loyalty in industrial marketing. They found that there is a positive relationship between them. With this study, when it comes to the smartphone market, our findings are consistent with that of their findings. Moreover, the results revealed that perceived irreplaceability had the most impact on brand loyalty. Brands should improve strategic marketing programs to gain opportunities against their rivals. Providing additional programs, enjoyment content, and usage can maintain the brand to gain perceived irreplaceability. If consumers believe that the product, which they use, is unique, they do not want to replace it with another brand. Eventually, consumers will be brand loyal and continue to use the product.

Consumer buying behavior is affected by both utilitarian factor and hedonic factor (Chung, 2015). In this study, system quality (as an utilitarian factor) and visual design (as a hedonic factor) were investigated. Findings turned out that system quality and visual design are the antecedents of brand loyalty and re-purchase intention in smartphone marketing. When brands design new models, they should not ignore product's appearance and system's architecture. Brands should focus on ensuring the design of the smartphone as beautiful. In this study, system quality refers to system's speed, smartphone's screen, graphics, and performance consistency. When the brands' design phones system, these factors must be taken into account. For smartphone brands, to identify what consumers want and concentrate on satisfying consumer's desire is very important (Kim et al., 2016).

The most important contribution of this study is determining the impact of technology consciousness. Technology is constantly changing, just like fashion. Consumers are sensitive to this change, as it is in fashion. This sensitiveness is called consciousness. Although there are studies on fashion consciousness in the literature (Lertwannawit & Mandhachitara, 2012; Walsh et al., 2001; Shim & Gehrt, 1996), there are not sufficient studies on technology consciousness. This study fills this gap in the literature from this point of view. As a result of the analysis it was found that technology consciousness has an effect on re-purchase Intention, but not on brand loyalty. In technological products, when an upper model of the product emerges, consumers tend to re-purchase this model. Brands can get the opportunity to increase their sales by adding new technological features to their products. This technological feature can be realized with small differences such as improvement of image quality, and development of different applications. It will not only increase the sales of brands but also make a difference to their competitors.

With the research done in the marketing literature, a consensus has been reached that brand loyalty provides a favorable return on the brand (Jones & Taylor, 2007). The most important output of these positive returns is the re-purchase intention. The last finding of this study approves existing literature that brand loyalty will remain the main antecedent of re-purchase intention (Dick & Basu, 1994). Brands that want to continue their sales should look for ways to create brand loyalty in their customers. In order to establish brand loyalty, factors affecting brand loyalty need to be known and should be studied.

In addition to findings mentioned above, this study evaluates brand loyalty and re-purchase intention in smartphone marketing by adopting a different theoretical perspective. Although smartphone marketing is growing day to day, there is still scarce research in Turkey. This study sheds light on the smartphone market in Turkey and evaluates the results of the analysis in terms of marketing. In conclusion, this study contributes to better understanding of the antecedents of both brand loyalty and re-purchase intention in smartphone marketing.

6.2 Limitations and Suggestions for Future Research

This research reports important findings on brand loyalty and re-purchase intention in smartphone marketing, but several limitations exist.

Firstly, the sample in this study is suitable for the structure and the work of the study. Nevertheless, it should not be forgotten that this study has been applied to Turkish smartphone users. Different results can be obtained when a survey is applied to smartphone users in different cultures. For example, Walsh et al., (2001) examined brand consciousness by making cross-cultural comparisons and concluded that brand consciousness varies according to culture. In their study, Walsh et al. (2001) found that brand consciousness and other factors could vary in different cultures. To generalize the findings globally, comparative researchers involving other culture are essential. For this reason, the results of this study are limited to Turkish smartphone users.

Secondly, the term of technology consciousness, which derived from fashion consciousness, is one of the topics that have not been investigated. We adopted technology consciousness in smartphone marketing. To generalize the results in technological products, the technology consciousness factor should be examined on other technological products such as smart TV or tablet PC.

Thirdly, this study offers results and recommendations that will benefit brands. It is not to be expected that success will be achieved only by fulfilling these recommendations. Marketers should also take into account other important research done in this regard.

Fourthly, this research has been applied university students who are highly educated persons. If this research had been applied to low-educated people, probably more differently results could be obtained. Future research can compare the differences between low educated individuals and highly educated individuals.

Lastly, when asked participants if the last two phone brands they used were the same. Respondent rate using the same brand was 38.1%, whereas respondent rate using different brands was 61.5%. This result showed that a large majority did not use the same phone brand. More results that are meaningful can be obtained if the majority of consumer groups that use the same brand is taken as the research sample. Surveys that would be conducted in the future, these two consumer groups (as long-term and short-term users) can be observed separately and the results can be compared.

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Social Presence Antecedents and Consequences in Massive Open Online Courses

Jehad Imlawi¹

¹IS Department, Faculty of Information Technology, Al Al-Bayt University, Mafraq, Jordan

Correspondence: Jehad Imlawi, IS Department, Faculty of Information Technology, Al Al-Bayt University, Mafraq, Jordan.

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Abstract

A massive open online course (MOOC) is an emerging online courses platform that solicited a massive participation, because it is accessible through the Internet. Students, who seek open courses in MOOCs, are influenced by the degree of social presence they perceive when interacting in such online learning communities. The online community design artifacts, that promote social presence in MOOCs websites, are critical to foster online students' behavior.

This study aimed to investigate a thorough list of online community design artifacts that could influence social presence perception in MOOCs websites. The list included categories related to the MOOCs instructor, students, and the MOOCs website. The study also investigates the impact of social presence on students' behavior; satisfaction, enjoyment, and their attitude toward the website.

To validate the research model, an online survey was utilized. Results indicated that the model explained a great share of the variance for the social presence.

Keywords: social presence, MOOCs, learning enjoyment, student satisfaction, attitude toward a website

1. Introduction

MOOCs are classes that are available online, and open for diverse learners with different backgrounds (Breslow et al., 2013). MOOCs are transforming higher education; Voss (2013) argued that MOOCs attract a larger audience than any other form of online education. It attracts learners who speak different languages, with a wide range of ages and prior education. However, there has been limited research investigated how different MOOCs platforms could influence learners' satisfaction, their enjoyment, and their attitude toward these MOOCs platforms.

Social presence is defined by Short, Williams, and Christie (1976, p. 65) as "the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships". Substantial research investigated social presence, and its influence on online user behavior. Most prior research has confirmed the positive impact of social presence on factors such as trust (Hess, Fuller, and Campbell, 2009), information sharing (Miranda & Saunders, 2003), and attitude toward websites (Daliri, Rezaei, and Ismail, 2014). However, little research were conducted on social presence in the field of MOOCs.

Social presence is related to Face-to-Face education, where students directly interact with instructor and other fellow students (Adams, Morris, & Scotter, 1999). Online education, such as MOOCs, have less degree of social presence (Imlawi and Gregg, 2014). Imlawi, Gregg, and Karimi (2015) argued that what is true in face-to-face environments might not be true in online environments. Thus, more research is still needed to improve our understanding of how to improve social presence in MOOCs websites.

In online communities, like MOOCs, social presence emerges as one of the most important design principles (Biocc, Kim, & Levy, 1995) that significantly influence online users' behavior. Thus, research is needed to gain insight into the design of MOOCs, and to improve MOOCs websites in a way that improve user behavior and improve users' attitude toward the MOOCs websites (Shen, and Khalifa, 2009). Moreover, little research has been conducted to define online community artifacts that could influence social presence in online environments (Kumar & Benbasat, 2006). Qiu and Benbasat (2005) argued that it would be valuable to invest more research on the impact of online community artifacts on social presence.

Prior research has thoroughly studied social presence. However, there still some gaps in research on social presence. First, little research investigated social presence in fully online asynchronous courses (Rodriguez, 2015). Second, most research has focused on the influence of social presence on online user behavior, with less research focused on the antecedents of social presence.

This research tried to examine the online community artifacts that could influence social presence. Accordingly, three categories of these artifacts were identified in this research. First category includes factors related to the course instructor, self-presentation and extraversion. Second category includes factors related to the MOOC students, attention, perceived control over a MOOC website, perceived responsiveness of a MOOC website, and perceived synchronicity of a MOOC website. Third category includes one factor related to the MOOC website itself, media richness.

The goal of this study is to address gaps in the literature, by investigating the key antecedents and consequences of social presence in MOOCs websites. This study contributes to research by investigating a wide variety of online community artifacts and its impact on social presence. The research also study the impact of social presence on online user behavior; satisfaction, enjoyment, and attitude toward MOOCs websites.

2. Literature Review

2.1 Social Presence

Short et al. (1976) investigated social presence, they define it as “the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships” (Short et al., 1976, p. 65). They emphasized on the importance of social presence in communication media. Social presence is related to the feeling of warmth when interacting with others. It was found to be the highest in face-to-face interactions, thus, online interactions are required to convey personal, warm, sociable, and sensitive feelings to substitute for social presence (Shen & Khalifa, 2009). Social presence is one of the central design principles for social computing technologies such as Email, online chat, and online communities (Shen & Khalifa, 2009; Riva, Davide, and IJsselsteijn, 2003).

Online learning has thrived in the last decade because of the explosive development in interpersonal communication. Communication is a cornerstone in online learning, because of the physical separation between the learners and the learning providers. However, Ward & Newlands (1998) argued that online learning environment is not as effective as face-to-face learning environment because of the lack of a direct interaction. Bullen (2007) found that course students who utilized computer-mediated conferencing felt disconnected from others comparing to traditional face-to-face class, due to lack of facial expressions. Consequently, research should focus on the importance of social presence in online learning, to substitute for direct interaction of face-to-face learning.

Plenty of factors related to the social presence were investigated in prior research. Research looked at social presence when interacting with other human via a medium (such as chats, message boards, or virtual communities), or when interacting with non-human, such as intelligent agent, or simulated parties. Research operationalized these design artifacts via avatar, recommendation agent, emotional or social displays such as pictures and videos (Dormann, 2001; Gefen & Straub, 2003).

Prior research investigated the impact of social presence on learner satisfaction (Gunawardena & Zittle, 1997; Rodriguez, 2015; Russo & Benson, 2005), information satisfaction (Aydingül, Spohrer, Heinzl, & Kostrzewa, 2016), perceived learning (Richardson & Swan, 2003), student engagement (Wise, Chang, Duffy, & Del Valle, 2004), interaction between learners (Lomicka & lord, 2007), trust (Hess, Fuller & Campbell, 2009), and attitude toward websites (Daliri, Rezaei & Ismail, 2014).

2.2 MOOCs

A massive open online course (MOOC) is a course aiming at large-scale interactive participation and open access via the web (Siemens & Downes, 2013). MOOCs attract learners from different areas, and different cultures and backgrounds. Lucas (2013) argued that MOOCs can potentially disrupt higher education. It connect learners to each other via social engagement tools such as discussion forums to share knowledge, and support online learning (Liyaganawardena, Adams, & Williams, 2013).

MOOCs consist lectures, in the form of short videos and related course content, along with feedback mechanisms, in the form of group interaction and collaboration (Alraimi, Zo, and Ciganek, 2015). MOOCs appeared in 2008, and became popular in 2012, thus, it is relatively a new concept that still need much research to understand its ability to transform online learning. Specifically, research need to focus on the design of MOOCs that can make it more accessible by learners.

3. Research Model and Hypotheses

3.1 Social presence Antecedents

This research investigated a thorough list of both antecedents and consequences of social presence. Regarding the antecedents, three categories of online community design artifacts were investigated in this study. The first category includes factors related to the MOOC course instructor, self-presentation and extraversion. Second category includes factors related to the members of the online learning community: attention, perceived control over the MOOC website, perceived responsiveness of the MOOC website, and perceived synchronicity of the MOOC website. Third category includes one factor related to the MOOC website itself, media richness. Figure 1 shows the research model

3.1.1 Self-Presentation

Ma and Agarwal (2007) defined self-presentation as “a process to communicate one's identity, helping others form a more sophisticated and accurate understanding of (Who am I?)”. In traditional face-to-face environments, it is easier to express personality, identity, and social attitudes. Online communities, on the other side, are required to provide some features that assist online users to form online identity, verify this identity, and communicate it to fellow members (Ma and Agarwal, 2007; Blanchard and Markus, 2004). Example of these features are signatures, avatars, and personal pictures. Using such features assist in communicating online behavior along with a complete context.

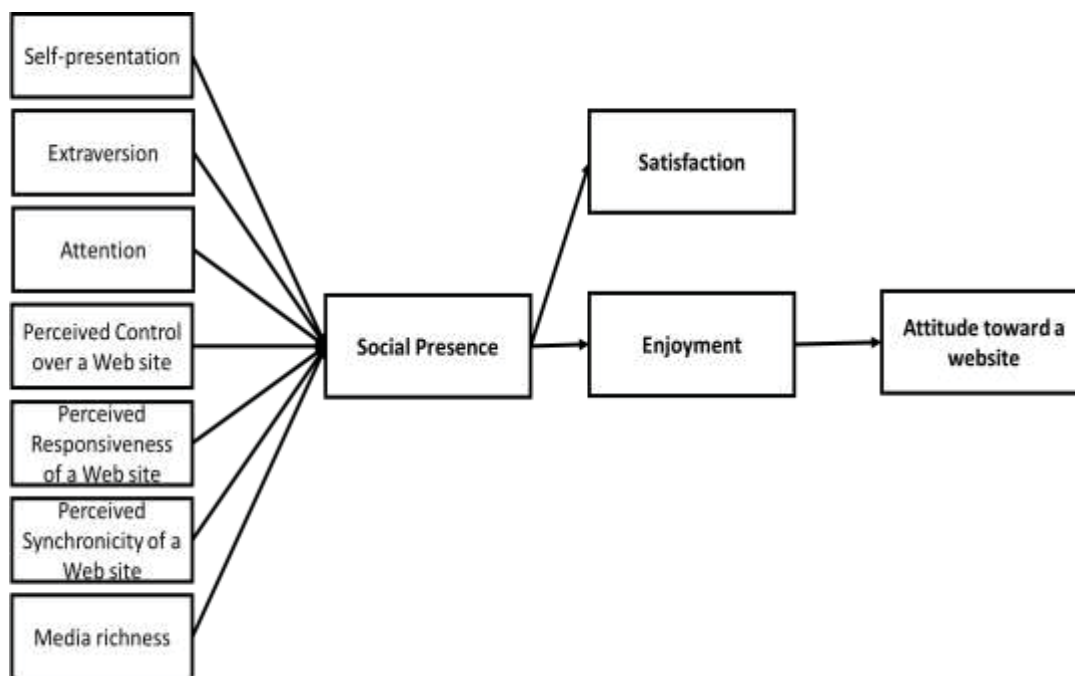


Figure 1. The research model

Shen and Khalifa (2009) found that member's perceived usage of online community artifacts supporting self-presentation is positively related to users' sense of social presence. Prior research also found that online users' self-disclosure positively impact users' engagement in online communities (Imlawi, Gregg, and Karimi, 2015; Imlawi and Gregg, 2014). Experiments found that Facebook users' self-disclosure, such as posting photographs, makes them feel more popular (Christofides, Muise, & Desmarais, 2009). Therefore, the study hypothesizes:

H1: Self-presentation of MOOC instructor will positively influence students' perceptions of social presence.

3.1.2 Extraversion

Prior research on social presence paid an attention to the influence of personality in online settings (Hess, Fuller, and Campbell, 2009). Extraversion is one of the big five personality dimensions (Goldberg, 1981). Isbister and Nass (2000) argued that extraverted personality can be manifested in interfaces through text, voice, and animation.

Social presence theory focused on the human warmth and sociability (Short et al., 1976). Instructors who show

extraverted personality are expected to be more socially perceived by their students. Therefore, the study hypothesizes:

H2: Extraversion of MOOC instructor will positively influence students' perceptions of social presence.

3.1.3 Online Learning Members' Attention

Social presence theory determined the individual differences in the perception of social presence (Short et al., 1976). Users' attention is one of these differences among users. Adding contents to the MOOC website does not mean that every student would pay the same attention, understanding, and acting toward these contents. Consequently, they are not expected to be affected the same way and amount. In their study, Felt et al. (2012) evaluated whether Android users pay attention to the permission information during installing mobile applications. They found that only 17% of participants paid attention to permissions during installation. According to the Wogalter's Communication-Human Information Processing (C-HIP) model, user attention is the first step between the delivery of online content, such as warnings, and the user's behavior (Smith-Jackson & Wogalter, 2006). Specifically, attention happens when users notice the online contents.

Prior research investigated many individual differences, such as personal innovativeness (Agarwal & Prasad, 1998), and computer playfulness (Hess, Fuller, and Campbell, 2009). However, little research studied the influence of attention. Moreover, in prior research there is a confusion between awareness and attention factors. Awareness might happen without noticing any of the interface content, because of prior experiences or knowledge. Attention, however, is the process of noticing interface contents. MOOC students, who pay attention to interface contents, are expected to perceive a higher degree of social presence. Therefore, the study hypothesizes:

H3: MOOC students' attention will positively influence their perceptions of social presence.

3.1.4 Perceived Control over a MOOC Website

Cui, Wang, and Xu (2010) defined website interactivity as "the degree to which the user perceives the Web site to be controllable, responsive, and synchronic". Online users seek to reduce uncertainty in their online experiences. Perceived control over a website assist in reducing the uncertainty (Short et al., 1976).

Cui, Wang, and Xu (2010) found a relationship between perceived control over a website, and the availability of information about fellow users in online community (cognitive social presence). Similarly, they found a relationship between perceived control over a website, and the use of emoticons in online users' comments (affective social presence). Cui, Wang, and Xu (2010) also found that perceived control over a website influence attitude toward a website.

Flow theory stated that when user experience more control on a website, they tend to feel more involvement, more flow, and more pleasure (Ariely, 2000). Thus, it is expected that when users experience more control over a MOOC website, they would perceive a higher degree of social presence. Therefore, the study hypothesizes:

H4: MOOC students' perceived control over a MOOC website will positively influence their perceptions of social presence.

3.1.5 Perceived Responsiveness of a MOOC Website

Responsiveness refers to the interactivity between the members of online communities. It was defined by Green and Pearson (2011) as "the presence of feedback to users, and the availability of response from the site managers". E-commerce websites have recognized the importance of website responsiveness. Green and Pearson (2011) found that responsiveness is positively related to perceived ease of use.

Liu (2003) found responsiveness to improve interactivity. When users experience interactive online environment, they are expected to perceive the experience more intimately. Intimacy is one dimension of social presence (Short et al., 1976). People, in face-to-face environment, get a direct response from others. Online environments miss the direct interaction. Therefore, online features, that provide responsive feedbacks, are expected to increase users' feeling of intimacy and sociality.

Online information should be timeliness to be valuable (Doll & Torkzadeh, 1988). Responsive feedback guarantees a timeliness information, and therefore, it is expected to positively influence online users' perception of social presence, by providing them with high quality information, that decrease their feeling of uncertainty.

Instructor's utilization of conversational method when talking to their students was found to affect the students' perception of social presence (Borup, West, Thomas, and Graham, 2014). A conversational manner needs a responsive behavior from the two parties in an interactive communication.

Han, Min, and Lee (2015) investigated what characteristics of social network sites fulfill their users' need. They found that immediate feedback, and other intimacy-related characteristics of SNSs, form social presence. Therefore, the study hypothesizes:

H5: Students' perceived responsiveness of a MOOC website will positively influence their perceptions of social presence.

3.1.6 Perceived Synchronicity of an Online Learning Website

Liu and Shrum (2002) explained that synchronicity form a powerful basis for website interactivity. They defined synchronicity as the timing of information exchange. A synchronous interaction is an interaction where the exchange between the interaction entities, a website and its users, is concurrent. When the interaction between the online learning website and its members is concurrent, those members are expected to feel more social presence, because concurrency is one of the face-to-face interaction features.

Prior research found a relationship between delay in synchronicity, represented by a longer download time, and negative attitude toward downloaded documents (Sears, Jacko, and Borella; 1997) and attitude toward websites (Dellaert & Kahn; 1999). Lowry, Romano, Jenkins, and Guthrie (2009) affirmed the positive influence of synchronicity on users' satisfaction. Therefore, the study hypothesizes:

H6: MOOC students' perceived synchronicity of a MOOC website will positively influence their perceptions of social presence.

3.1.7 Media Richness

Rich media was defined by Badger, Kaminsky, and Behrend (2014) as those media channels, that can transmit video, and audio, or to enable two-way communication. Hassanein and Head (2007) found that socially rich text and pictures increased perceptions of social presence with online shopping. Rich media deliver a greater feeling of presence (Schmitz & Fulk, 1991). When the communicated information is complex or ambiguous, then it is more effective to use rich media to convey such information (Badger et al., 2014).

Online learning environments, like MOOCs, are platforms that deliver a high level knowledge. It is more efficient to use richer media channels to convey such a knowledge. According to Adams et al. (1999), the richest interaction is face-to-face interaction, followed by video, audio, and then text. This suggest that rich media is connected to social presence.

Schmitz and Fulk (1991) argued that the ability to convey a sense of personal presence is one dimension that determine the richness of media. Similarly, the availability of two-way communication, which is one dimension of media richness (Badger et al., 2014), is also related to social presence. Therefore, the study hypothesizes:

H7: Media richness of a MOOC website will positively influence students' perceptions of social presence.

3.2 Social Presence Consequences

Social presence consequences investigated in this study are students' satisfaction, perceived enjoyment, and their attitude toward the MOOC website.

3.2.1 Students' Satisfaction

Sweeney and Ingram (2001, p. 57) defined student satisfaction as "the perception of enjoyment and accomplishment in the learning environment". The influence of social presence on satisfaction is well established in prior research (Rodriguez, 2015). Moore, Masterson, Christophel, and Shea (1996) found that instructor's verbal and nonverbal immediacy behaviors positively influenced students' satisfaction. Gallien and Oomen-Early (2008) noted that students who received consistent personalized instructor feedback, showed more satisfaction. Students' perceptions of social presence positively influenced their overall satisfaction (Russo & Benson, 2005), their satisfaction with the instructor, and the instructor satisfaction (Richardson & Swan, 2003). Lack of social presence in online courses was proved to lead to students' dissatisfaction (Cui, Lockee, & Meng, 2013).

Prior research provided strong evidences regarding the relationship between social presence and students' satisfaction in a text-based medium (Gunawardena and Zittle, 1997), and in the multimedia instruction (Steffey, 2001). Arbaugh (2001) explained that the reason for social presence influence on satisfaction is its ability to reduce the feelings of isolation, and to support the feelings of connection and community.

Richardson and Swan (2003) surveyed students who completed an online learning course. They found students with high overall perceptions of social presence also scored high in terms of perceived learning and perceived satisfaction with the instructor.

However, there is no consensus among researchers on the relationship between social presence and satisfaction (Rodríguez, 2015). Consequently, more research is still needed to clarify this ambiguity. Most studies found a positive relation between the two factors in online learning environments, however, some studies found a negative relation (So & Brush, 2008), or no relation between the two factors (Joo, Lim, and Kim, 2011). Therefore, the study hypothesizes:

H8: MOOC students' perceptions of social presence in a MOOC website will positively influence their satisfaction.

3.2.2 Students' Perceived Enjoyment

Enjoyment is an intrinsic motivation that was defined by Davis, Bagozzi, and Warshaw (1992) as "the degree to which performing an activity is perceived as providing pleasure and joy in its own right, aside from performance consequences". It pertains the feeling of joy, fun, and playfulness when committing any activity, regardless any other outcomes or consequences.

In contexts like online learning, enjoyment has emerged as an essential factor. Alraimi et al. (2015) found that perceived enjoyment in learning is one of the most important factors that positively influence students' continuance intention.

Prior research has confirmed the relationship between social presence and enjoyment in many contexts, such as online context (Hassanein & Head, 2004), mobile multimedia context (Sung & Yun, 2010), and online shopping context (Koufaris & Ajit Kambil, 2001). However, there is still little research about the relationship between social presence and enjoyment in other contexts (Hassanein and Head, 2007), especially emerging ones, such as MOOCs. Therefore, the study hypothesizes:

H9: Students' perceptions of social presence in a MOOC website will positively influence their perceived enjoyment.

3.2.3 Students' Perceived Attitude Toward the MOOC Website

Attitude expresses the favorable or dis-favorable toward an object. Several studies have investigated the positive influence of enjoyment on attitude towards a website (Hassanein, and Head, 2007; Childers, Carr, Peck, and Carson, 2002; Lee, Cheung & Chen, 2005; Perea y Monsuwé, Dellaert & Ruyter, 2004; Van der Heijden, 2003). Therefore, the study hypothesizes:

H10: Students' perceived enjoyment will positively influence their attitude toward the MOOC website.

4. Method

This study utilized a Web-based survey to validate the study constructs. Data were collected using a commercially available survey tool; Survey Monkey (www.surveymonkey.com). After the introduction about the study and its objectives, the first part of the survey asked screening questions to determine whether the respondent has participated in any MOOCs courses, and if yes, what MOOCs courses they finished, and which MOOCs websites they frequented. Then, the survey included the measurement items, to measure the proposed study constructs. Items were measured using a seven-points Likert Scale (from 1 - strongly disagree, to 7 - strongly agree). The study included eleven constructs which were measured using established questions from previous studies. Final construct's measurement items, along with their sources, are explained in the appendix. Finally, the survey included demographic questions.

A committee of three information systems professors, who have a considerable experience with MOOCs, have reviewed the survey, to make sure that the measurement items are appropriate for the context of the study. They also checked for the clarity of the measurement items, and the wording issues. Finally, the committee have reviewed the revised copy of the survey, to confirm that all their comments, and feedback have been applied, and no further improvements were needed.

The study utilized a convenience sample. The target respondents for this study were students of MOOCs courses. The survey link was posted to MOOCs Facebook groups, similar to other studies that investigated the behavior of online learners (Davis et al., 2014). Facebook was considered relevant to the context of this study, because MOOCs students commonly use Facebook to support their interaction (discussion and collaboration) and engagement (Alraimi et al., 2015; Breslow et al., 2013). Zheng, Han, Rosson & Carroll (2016) found that students were more engaged in Facebook groups designed for specific MOOCs courses, comparing to the MOOCs discussion forums. Respondents were directed to consider the last MOOCs course they finished when answering the survey. 310 completed responses were collected during two months, from October to December of 2016.

Control variable considered in this study are gender, experience with MOOCs, and the MOOCs website name and reputation. The study aimed to check if there is a difference between males and females, learners with substantial experience with MOOCs and other with less experience, and users of different MOOCs websites.

4.1 Data Analysis

The study used T-Tests to check for the control variables influence. It also used Partial Least Squares (PLS) for the hypotheses testing, and data analysis. PLS was selected because: 1) it can examine paths in the proposed structure model (Sung & Yun, 2010), 2) it can examine the items of the measurement model (Sung & Yun, 2010), 3) it is more appropriate for predication rather than testing whether data fit a predefined model (Éthier, Hadaya, Talbot, & Cadieux, 2006), which is consistent with the purpose of this study, and 4) PLS is more appropriate for relatively small sample size (Chin, 1998).

5. Results

310 respondents completed the survey. 59.4% were males. The control variables test showed no impact for gender, and experience with MOOCs, or the MOOCs website name ($P > 0.05$).

Following Fornell, and Larcker (1981) recommendations, three conditions were checked to evaluate research model properties. First, item loading should be higher than a recommended threshold of 0.7 (Hair, Anderson, Babin, & Black, 2010). Second, internal consistency should be adequate. For an adequate internal consistency, composite reliability, and Cronbach's α values for each construct should be high, at least 0.7. Third, the average variance extracted (AVE) should be above 0.5 for each construct. Table 1 demonstrates item loading, composite reliability, Cronbach's α , and AVE values for all constructs in the measurement model. All these values were acceptable, comparing to the recommended threshold values.

Discriminant validity was assessed by comparing Square Root of AVE for each construct, with the correlation between this construct and other constructs in the measurement model. Table 2 demonstrates that the study model has a good discriminant validity.

Results from PLS analysis are explained in table 3 and figure 2. All the hypotheses were supported, and significant at 0.05, 0.01, and 0.001 significance levels. The research model explained 63.7% of the variance for social presence, 32.5% of the variance for satisfaction, 38.1% of the variance for enjoyment, and 21.8% of the variance for attitude toward a website.

Table 1. item loading, composite reliability, Cronbach's α , and AVE values

Construct	Items Loading	Composite Reliability	Cronbach's α	AVE
Self- Presentation	(0.7 – 0.9)	0.91	0.78	0.71
Extraversion	(0.7 – 0.88)	0.79	0.84	0.65
Attention	(0.75 – 0.89)	0.81	0.85	0.54
Perceived Control	(0.71 – 0.73)	0.85	0.83	0.52
Perceived Responsiveness	(0.74 – 0.82)	0.83	0.8	0.54
Perceived Synchronicity	(0.71 – 0.8)	0.86	0.84	0.59
Media richness	(0.74 – 0.75)	0.89	0.85	0.58
Social presence	(0.83 – 0.86)	0.9	0.89	0.78
Satisfaction	(0.7 – 0.82)	0.89	0.72	0.62
Perceived Enjoyment	(0.7 - .83)	0.77	0.87	0.58
Attitude toward a website	(0.7 – 0.83)	0.77	0.78	0.57

Table 2. Discriminant validity. Square Root of AVE and inter-construct correlation

	Self.Pres	EV	Attn	PCon	PRes	PSync	MRich	SPres	Sat	PEnj	Attd
Self.Pres	0.84										
EV	0.44	0.81									
Attn	0.34	0.32	0.73								
PCon	0.47	0.34	0.30	0.72							
PRes	0.30	0.33	0.35	0.35	0.73						
PSync	0.48	0.36	0.36	0.49	0.48	0.77					
MRich	0.34	0.31	0.43	0.44	0.33	0.48	0.76				
SPres	0.40	0.44	0.49	0.45	0.52	0.40	0.40	0.88			
Sat	0.35	0.35	0.39	0.51	0.39	0.45	0.36	0.38	0.79		
PEnj	0.31	0.44	0.34	0.42	0.52	0.46	0.43	0.42	0.38	0.76	
Attd	0.37	0.40	0.51	0.47	0.40	0.45	0.42	0.41	0.32	0.31	0.75

Table 3. Hypotheses results

Hypothesis	Path coefficient	t-Value	P-Value	Results
1. Self-Presentation → Social Presence	0.29**	3.12	0.0005	Supported
2. Extraversion → Social Presence	0.27**	3.07	0.0007	Supported
3. Attention → Social Presence	0.4***	7.65	0.0000	Supported
4. Perceived Control → Social Presence	0.45***	8.21	0.0000	Supported
5. Perceived Responsiveness → Social Presence	0.69***	11.08	0.0000	Supported
6. Perceived Synchronicity → Social Presence	0.59***	10.32	0.0000	Supported
7. Media richness → Social Presence	0.21*	2.08	0.0202	Supported
8. Social Presence → Satisfaction	0.34**	4.02	0.0002	Supported
9. Social Presence → Enjoyment	0.33**	3.78	0.0002	Supported
10. Enjoyment → Attitude toward a website	0.2*	1.98	0.021	Supported

Note. Path significances: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$ (Two-tailed test).

6. Discussion

6.1 Key Findings

This study aimed to provide a more comprehensive understanding of social presence in MOOCs websites, by investigating a thorough list of social presence antecedents and consequences. Specifically, the study investigated the impact of three categories of online community design artifacts on social presence. The first category includes factors related to the course instructor, self-presentation and extraversion. The second category includes factors related to the students in the online learning community, the students' attention, perceived control over the MOOC website, perceived responsiveness of the MOOC website, and perceived synchronicity of the MOOC website. The third category includes one factor related to the MOOC website itself, media richness. The study also investigated the impact of social presence on the students' satisfaction, their perceived enjoyment, and their attitude toward the MOOCs website.

The empirical results significantly support all the hypotheses in the study. In terms of social presence antecedents, results showed that factors belong to the second category; perceived responsiveness ($\beta = 0.69$, $P < .001$), perceived synchronicity ($\beta = 0.59$, $P < .001$), perceived control ($\beta = 0.45$, $P < .001$), and attention ($\beta = 0.4$, $P < .001$), are the strongest predictor of social presence.

Results also showed that the list of antecedents investigated by this study explained 63.7% of the variance for social presence, which is a large share of variance, indicating that the antecedent list considered in this study is well prepared.

6.2 Implications

Prior research highlighted the importance of social presence in online environments. However, more investigation on social presence is still needed (Richardson & Swan, 2003). Similarly, research showed that MOOCs can significantly improve online education. However, there still is more research required, to better understand how to utilize such a technology, to improve online education.

One implication for literature is investigating a thorough list of social presence antecedents and consequences in one model. This provides a better understanding of social presence in online environments, and a better understanding of the interaction effects between these factors.

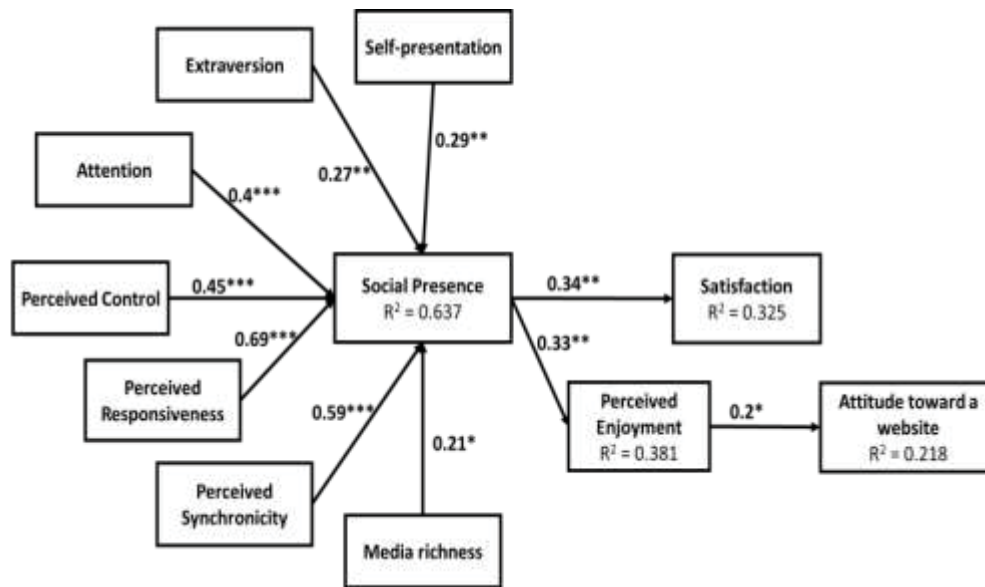


Figure 2. PLS result

This study has offered some contributions for practice as well; it provides MOOCs designers with a thorough list of online community design artifacts that were proven to positively influence social presence in MOOCs websites. The study assist MOOCs designers to focus on the importance of designing interfaces that is more sociable. The study also provides designers with a better understanding of the online users' behavior in MOOCs website.

6.3 Limitations and Future Research

Although the study contributed to both theory and practice, there are a few limitations associated with this study. The main limitation of this study came from the convenience sample, utilized by this study, to collect the data. When analyzing data, we found that the most respondents came from top famous MOOCs websites, such as coursera, edX, and Udacity. The name and reputation of such MOOCs websites might affect social presence as well. Future research is recommended to utilize more resources, to reach a diverse sample that includes students from various MOOCs websites.

7. Conclusions

This study investigated social presence in MOOCs websites. A thorough list of online community design artifacts was classified into three categories, and their influence on social presence was investigated. Results supported the study hypotheses about the influence of these factors on social presence. The proposed social presence antecedents explained a large share of variance for the social presence (63.7%).

The study also proved the positive influence of social presence on online users' behavior; namely, students' satisfaction, their enjoyment, and their attitude toward the MOOCs website.

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Appendix

Measurement and items

Table A1. Measurement and items

Construct	Items	Source
Self-presentation	<ol style="list-style-type: none"> 1. I tell my stories to other community members in this community. 2. I share my photos or other personal information with people from this community. 3. I express my opinions in my posts. 4. I present information about myself in my profile. 5. I use a special (or meaningful) signature in this community that differentiates me from others. 6. I use a special (meaningful) name or nickname in this community that differentiates me from others. 7. I let other community members visit my personal Web page. 	Ma and Agarwal (2007)
Extraversion	<p>Please indicate the extent to which the following attributes apply to you:</p> <ol style="list-style-type: none"> 1. Sociable. 2. Talkative. 3. Active. 4. Impulsive 5. Outgoing 6. Shy 7. Reticent 8. Passive 9. Deliberate 10. Reserved 	Back, Schmukle, and Egloff (2009)
Attention	<ol style="list-style-type: none"> 1. I paid close attention to the community interaction. 2. I was able to concentrate on the community interaction 3. The community interaction held my attention. 4. During my interaction in this community, I was absorbed by the demonstrated activities. 	Davis (2004)
Perceived Control over a Web site	<ol style="list-style-type: none"> 1. While I was on the site, I was always aware where I was. 2. While I was on the site, I always knew where I was going. 3. I was delighted to be able to choose which link and when click. 4. I feel that I have a great deal of control over my visiting experience at this site. 5. While I was on the Web site, I could choose freely what I wanted to see. 	Cui, Wang, and Xu (2010)
Perceived Responsiveness	<ol style="list-style-type: none"> 1. The Web site is effective in gathering visitors' feedback. 2. This Web site facilitates two-way communication between the visitors and the site. 3. The Web site makes me feel it wants to listen to its visitors. 4. The Web site gives visitors the opportunity to talk back. 	Cui, Wang, and Xu (2010)
Perceived Synchronicity of a Web site	<ol style="list-style-type: none"> 1. The Web site processed my input very quickly. 2. Getting information from the Web site is very fast. 3. I was able to obtain the information I wanted without any delay. 4. When I clicked on the links, I felt I was getting instantaneous information. 	Lowry, Romano, Jenkins, and Guthrie (2009)
Media richness	<ol style="list-style-type: none"> 1. This Web site give and receive timely feedback. 2. This Web site use rich and varied language. 3. This Web site communicate a variety of different cues (such as emotional tone or attitude) 	Cable (2006)
Social Presence	<ol style="list-style-type: none"> 1. There is a sense of human contact in the website. 2. There is a sense of personalness in the website. 3. There is a sense of sociability in the website. 4. There is a sense of human warmth in the website. 5. There is a sense of human sensitivity in the website. 	Kumar, and Benbasat (2006)
Satisfaction	<ol style="list-style-type: none"> 1. After using this website, I am: very dissatisfied - very satisfied. 2. After using this website, I am: very displeased - very pleased. 3. Using this website made me: frustrated - contented. 4. After using this website, I feel: terrible - delighted. 5. After using this website, I will: never recommend it to my friends – strongly recommend it to my friends. 6. After using this website, I will: never use it again – most likely use it again. 	Nadkarni, and Gupta (2007)
Perceived Enjoyment	<ol style="list-style-type: none"> 1. I found using this website entertaining 2. I found using this website pleasant 	Yu, Ha, Choi, and Rho (2005)

Attitude toward a
website

3. I found using this website is exciting
4. I found using this website is fun
5. I found using this website is enjoyable.
1. I would enjoy visiting this website.
2. I like to spend much time browsing this website.
3. I would try to leave this website as soon as possible.
4. I would avoid getting back to this website after I have left it.
5. I want to avoid exploring or investigating this website
6. I like this website.
7. I would avoid any unplanned activity in this website.
8. I would be satisfied with this website.
9. I would have a positive attitude toward this website.

Deng and Poole
(2010)

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Creating Creative Thinking in Students: A Business Research Perspective

Nitaya Wongpinunwatana¹, Kunlaya Jantadej¹ & Jamnong Jantachoto²

¹Thammasat Business School, Thammasat University, Bangkok, Thailand

²Faculty of Business Administration, Rajamangala University of Technology Phra Nakhon, Bangkok, Thailand

Correspondence: Nitaya Wongpinunwatana, Thammasat Business School, Thammasat University, Bangkok, Thailand.

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Abstract

The objective of this study is to investigate how to create creative thinking in students through encouraging students' logical thinking, motivation, and collaborative learning. The study also attempts to find suitable teaching procedures for the research subject. This study is based on qualitative research. Participants were graduate students studying business research methods. The results indicate that logical thinking affects the analytical skill. This skill, in turn, affects students' creative thinking. A model of creating creative thinking in students is proposed from the research findings. Instructors may consider using the modeling to boost creative thinking in students. In addition, the findings suggest that the main teaching processes should be as follows: Instructors should encourage students to use their logical reasoning during the conceptual framework development. Workshops on students' research projects should be conducted so students can practice doing research. Students should make oral presentations of their projects and experts invited to comment on them. Collaborative technologies need to be introduced so that instructors and students can communicate with each other on assignments. Apart from collaborative tools, instructors can set up additional sessions after hours to allow students to discuss problems they are facing. Research classes should incorporate in the coursework three student presentations: problem statement, research proposal, and completed research report. Finally, instructors should form students into groups and establish roles for the members.

Keywords: creative thinking, motivation, collaborative learning, logical thinking

1. Introduction

Teaching students to possess logical and creative thinking conforms to academic reformations adopted in Thailand, which intend to teach students to think critically. In addition, this teaching complies with the 11th National Economic and Social Development Act. This act aims to improve the educational achievement of Thai people, not only regarding quantitative aspects, but also by initiating a new body of knowledge to increase competency needed to compete with other countries. However, this new body of knowledge needs academic discipline and scholarly instruction in the subject of research (Office of the National Economic and Social Development Board, 2015). Moreover, effectively and efficiently analysing and synthesizing existing knowledge requires logical and critical thinking skills. These skills are incorporated in successful research processes. This statement agrees with Zhao (2009), who states that teachers could train MBA students to analyse effectively and efficiently by using logical thinking.

To help solve these problems, instructors can incorporate logical thinking into the research subject (Laney, 2001). Although logical thinking results from cumulative personal experiences gradually collected over a long time, teachers can choose instructional methods that accelerate the learning process to develop this principle more rapidly (Rimanoczy, 2007; Zhao, 2009). Therefore, the purpose of this research is to examine the nature of logical thinking and how it can develop and enhance students' creative thinking. In addition, this research attempts to find suitable teaching procedures for the research subject.

2. Theoretical Background

2.1 Creative Thinking

Students possessing creative thinking ability demonstrate this in the form of inferences, interpretations, and

assumptions; as well as the determination of concepts, theories, principles, definitions, and frames of reference (Paul and Elder, 2011). The ability to form inferences originates from logical thinking. Logical thinking comes from learning from other people's mistakes and actions. These experiences and actions, if reasonably thought through, help students to cope with difficult situations successfully (Rimanoczy, 2007; Zhao, 2009). Normally, people use logical thinking to make decisions by simplifying complex situations to simple solutions (Morgan and Thiagarajan, 2009).

Creative thinking and critical thinking are often inseparable. Critical thinking is the ability to think clearly and rationally about what to do or what to believe. Critical thinking is an essential part of creative thinking, because people need critical thinking to evaluate and improve their creative ideas (Lau and Chan, 2004; Nimalathasan and Valeriu, 2010). New ideas generated from creative thinking must be useful and relevant to the problems if they are to be fixed. Critical thinking plays a crucial role in evaluating new ideas, in selecting the best ones and in modifying those ideas as necessary (Lau and Chan, 2004; Paul and Elder, 2011).

2.2 Motivation in Education

One of the important components in the study of research is motivation. Students' motivation plays a crucial role in learning the conceptual process, critical thinking process, and information processing skill (Cavas, 2011). The instructor's level of motivation is an important factor that relates to students' creative thinking (Horng et al., 2005; Davis et al., 2014; Palaniappan, 2014). Motivation is an important educational variable that can promote new learning, strategies and behaviours, and skills. If students perceive the value of learning tasks, they will actively participate in those tasks to construct a meaningful understanding of a new concept based on their existing knowledge (Cavas, 2011).

Cavas (2011) concludes that there are six categories of motives: self-efficacy, active learning value, active learning strategies, performance goal, achievement goal, and learning environment stimulation. Self-efficacy is students' beliefs about their own ability to perform well in learning tasks. The active learning value consists of acquiring problem-solving competency, stimulating their own thinking, and finding the relevance of learning. Active learning strategies are a variety of strategies to construct new knowledge based on previous understanding. The performance goal is students' competition with other students in the classroom to get recognition from the teacher. The achievement goal is students' satisfaction as they increase their competence and achievement during learning. Finally, the learning environment stimulation is comprised of learning environment factors such as curriculum, teaching style, and learner collaboration.

2.3 Collaborative Learning

Collaborative learning is a joint effort by all participants within a group of students, where they work together to search for understanding, meaning, or solutions to accomplish a task (Hong, 2011). Collaborative learning requires individuals to take responsibility for a specific section and then coordinate their respective parts together (Kyndt et al., 2013). Knowledge can be created within members in a group where members actively interact by sharing experiences and take on asymmetric roles (Mitnik et al., 2009). Collaboration can be structured in the form of group-based collaboration or idea-centred collaboration (Hong, 2011). Group-based collaboration is the method where each student within a group is assigned to complete a subtask and then the subtasks are merged together like a jigsaw puzzle. Idea-centred collaboration is the method where students work together without forming a group or having a general plan.

Collaborative learning is very important in achieving critical thinking ability (Gokhale, 1995). Individuals are able to learn effectively and efficiently and retain more information when they work together in a group rather than individually (Gokhale, 1995; Hong, 2011). Technology has become an important factor in collaborative learning. The internet allows individuals to share personal knowledge and ideas. In addition, collaborative learning which uses technology in a learning environment supports group interactions, which in turn mediates the acquisition of new knowledge (Mitnik et al., 2009).

2.4 Compatibility with Teaching Methods

Various theories from cognitive psychology (see e.g., memory theory, cognitive learning theory, mental model theory and cognitive-fit theory) have been adopted by researchers to explain the effect of teaching methods on user's performance in problem solving. However, some previous empirical studies of teaching and learning show mixed results on the benefits of the teaching methods in improving users' performance in learning (Murphy, 1990; Eining and Dorr, 1991; Gregor, 1996). A plausible reason may be the appropriateness of theory used to predict the results. Activity theory may be able to explain the contrast previous research results.

Activity theory is wildly used in education and training. This theory can be used to explain the learning process

(Engeström et al., 1999). This theory comprises of five related elements: subject, object, community, tools and division of labour. First, subject is actors engaged in the activities. The activity theory considers subject as a team instead of one actor. Second, object can be thing which is tangible and/or intangible. The object, however, should represent the reality. Third, community is a group of actors involved in the activity system. In instructor-led teaching and demonstration, lecturer, normally, is the only one who conducts the activities. Fourth, tools can be anything used by actors in accumulation and transformation of knowledge. Finally, division of labour is hierarchical structure of activities among actors in accumulation and transmission of knowledge.

Numerous teaching methods are available for instructors to use in the classroom (e.g., Laney, 2001; Taylor, 2013). As this research puts an emphasis on teaching techniques that enhance students' creative thinking, the most commonly used teaching methods will be reviewed. These teaching methods include: concept-based instruction, role-playing, and case-study approach. The choice of teaching methods depends largely on the subjects that are being taught; the choice may also be influenced by the enthusiasm of the students (Taylor, 2013). Concept-based instruction is the process involved with teaching the general concept definition. This method tends to be more appropriate when teachers want to instruct students with precise definitions and concepts. Role-playing is an experience-based instruction. Role-playing activities are often employed within the format of a simulation. Simulations replicate the essential characteristics of the real world. A case study is normally based on a real life situation. A case-study approach can be used within units or subjects to help students analyse puzzling or unexpected events through subject reasoning. Therefore, this research examines the characteristics of the five elements of activity theory together with teaching methods. Researchers believe that the fit between teaching methods and the process of task or activities should enhance knowledge assimilation, which in turn leads to creative thinking.

3. Research Methodology

This research was conducted with graduate students studying business research methodology at a government-sponsored university in Thailand. The total participant count was 100 students in two semesters over one year. As research can be classified as quantitative or qualitative, this paper focuses on methods to teach quantitative research. Students in each semester were divided into groups to complete assigned research projects. Each group selected their own research topic. Each semester was divided into fifteen sessions of three hours in each session. Six sessions were used to teach research concepts and processes, emphasizing quantitative research. Two sessions were used to teach qualitative research, while five sessions focused on statistics. The last two sessions were used for research presentations by each group. These sessions allowed students in each group to present their conceptual models to the other groups in order to be evaluated for originality and uniqueness (Palaniappan, 2014). Figure 1 outlines the chronological sequence of this study. The process included two cycles: developing instructional methods to encourage creative thinking, and testing those instructional methods.

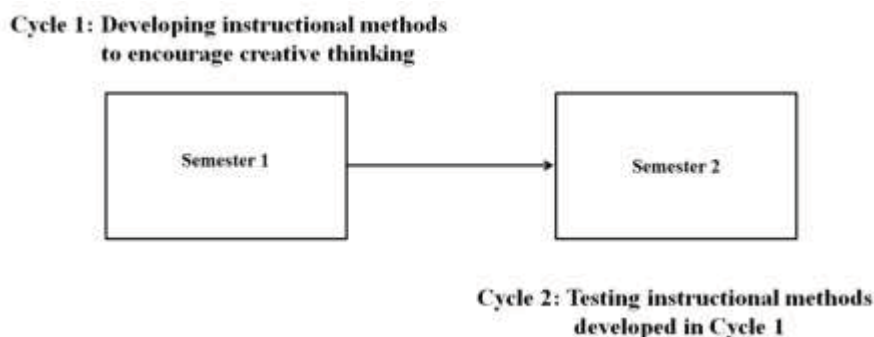


Figure 1. Chronological Sequence of this Study

The explanation of each cycle is as follows:

Cycle 1 is developing instructional methods to encourage creative thinking. In this cycle, instructors adopt Plan (identifying the problems and planning the teaching), Act (delivering the teaching), Observe (collecting data), and Reflect (evaluating the results) are as follows:

- Before lecturing in each course session, instructors ask students in each group to finish a case study within 30 minutes. After this assignment is completed, the instructor provides a possible answer for the case study and explains research concepts supporting this answer. In addition, instructors encourage students to use their logical

thinking to solve case-study questions. Examples of case-study questions are “is this case study topic relevant for business?” or “does the relationship among factors in the conceptual model make sense?” Instructors use three case studies to teach research concepts. One for defining research problems, another for building a conceptual model (or theory building), and the last for designing questionnaires. At the same time, other instructors teach statistical concepts and then ask students to finish three statistics case studies, including selecting appropriate statistical measures, analysing research results, and summarizing results.

- Apart from working on case studies, each group is required to complete and make two presentations on their own research project. The first presentation is the research proposal. After this first presentation, instructors ask a representative from each group to participate in a focus group. The objectives of the focus group are to extract (1) any significant information that may hinder students’ creative thinking to develop a conceptual model and (2) any problems that have not been posted or discussed yet on the collaborative webboard. Each focus group takes three hours. The second presentation is the completed research report.
- Instructors answer questions asked by the students, while at the same time encouraging them to develop their research, especially the conceptual model, by using logical analysis. In addition, students in each group receive comments related to their research project. These comments come from an instructor who is an expert in the students’ research topic, and two instructors of research methodology. Students from other groups may comment as well. The course instructors review the comments and make suggestions on how to improve the research, and then distribute to all students.
- Instructors assess students’ creative thinking ability by analysing their research papers, together with reviewing discussions on the collaborative webboard. The primary focus is on the conceptual model because this part of the research project indicates whether or not students apply logical thinking, and in turn, creative thinking on their research projects.
- Lessons learned from this process are applied in future research methodology courses.

Cycle 2 is testing instructional methods developed in Cycle 1. This step is done in the same manner as in Cycle 1.

The materials and instruments used in this research consist of comprehensive notes for teaching research processes, six assignments (in the form of case studies) and collaborative technologies (e.g., webboard). Case studies are developed from students’ research papers in previous semesters. Three case studies – for defining research problems, building a conceptual model (or theory building), and designing a questionnaire – are used to emphasize the use of logical thinking. The other three statistics case studies – for selecting statistical measures, analysing research results, and summarizing results – are used to help students understand the foundations of statistical knowledge. Apart from the free collaborative technologies (e.g., Facebook or Line), a proprietary webboard called ResYouAsk webboard (incorporating chats and discussion forums) are utilized. Students use these forums to post their problems when doing research projects and get feedback from instructors, normally within one day. For chats, students and instructors discuss students’ research projects at an assigned specific time. Figure 2 shows two shot screens for ResYouAsk webboard.

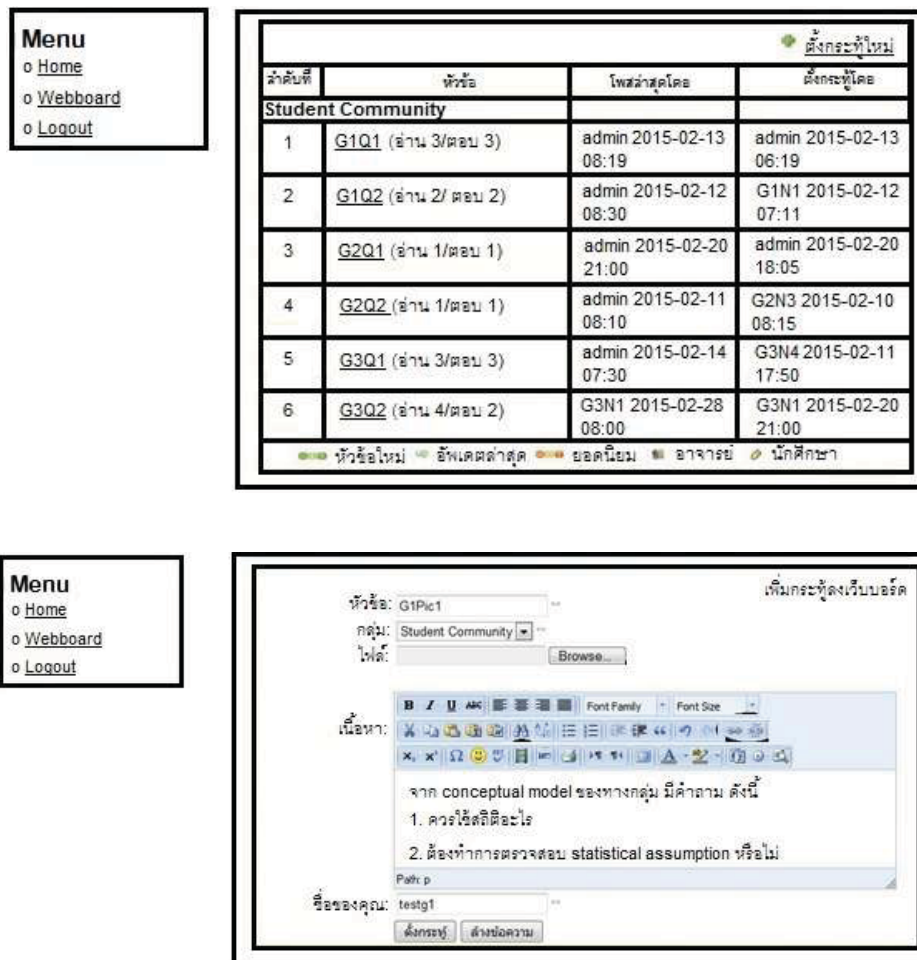


Figure 2. Two shot screens for ResYouAsk webboard

4. Analysing the Results

This research analyses students' creative thinking based on the attributes of their logical thinking, motivation to learn, response to collaborative learning, and compatibility with teaching methods.

4.1 Cycle 1: Developing Instructional Methods to Encourage Creative Thinking

4.1.1 Identifying the Problem and Planning the Teaching

The quality of students' literature reviews showed no improvement, with most citations not properly done. Each group of students usually cited previous research written in Thai language only. Some previous research cited is not good quality. The main reasons for these problems are as follows: First, students cannot efficiently read through the prior research to gain an understanding of the main concepts. This is due to the fact that the students apparently lack sufficient ability in reading English. Second, students did not effectively learn research processes from the case studies developed in the previous semester, which consist of the major problems that the previous students encountered while studying research. Third, students commented that there is a lack of privacy when using Facebook for communication, especially when describing problems. In addition, instant communication (chat) via Facebook is not appropriate because students normally use nicknames for their Facebook accounts. Instructors had difficulty in following the group progress because of the nicknames. Facebook also does not have log files to collect questions and answers which can be used as guidelines to analyse students' intellectual ability. Instructors can analyse a log file with text analysis statistical software for further data analysis. Fourth, collaboration among members in a group still was not appropriate. Each group normally divided research into separate tasks and then assigns these tasks to group members. Students then tend to work individually instead of as a group. Fifth, regarding statistical analysis, students did not complain as much about the teaching process, except for the three statistics case studies. The students want case studies that better relate to their research project. The following information from focus group participants supports the above analysis.

“It is difficult to read research papers and understand the main concepts, especially those written in English.”

“Case studies at the beginning of each period consume too much time. In addition, the case studies are not relevant to my research topic.”

“Sometimes I want to chat with instructors to get an instant answer, but the Facebook chat function does not work properly.”

“Instructors should create Frequently Asked Questions (FAQs) so that students can use them as guidelines for their research papers.”

“For my group, we created and assigned roles to each member. We divided the research paper into tasks which were assigned to each member. We also appointed one person to collect the completed tasks, and then consolidate them into one paper, while also correcting all errors.”

From the problems noted above, the teaching plans were revised as follows. First, instructors still must continually encourage students to apply their logical thinking when developing their conceptual models. Second, to solve the problem of students' unsatisfactory citations of previous research papers, new criteria for students' literature review was established. Two-thirds of previous research cited should be in English, and should come from online databases provided by university libraries. Third, to promote ability to read research papers from journals, instructors prepared notes on how to read them to gain a proper understanding of the contents.

4.1.2 Delivering the Teaching

Teaching methods in this cycle are as follows: First, instructors continued to encourage students to use their logical thinking while developing conceptual models. For literature review, instructors explained and handed out notes on how to read research articles from journals. Second, case studies were revised to be less complex, take less time to finish, and better relate to students' research topics. Students still continued to work in groups to finish six case studies in a set schedule. Third, at the beginning of the semester, instructors asked students to form into groups. Roles were created for each member, and a group leader was selected. Each role has responsibility for a specific research task, while the group leader coordinated and consolidated the parts together. Fourth, the communication technology was changed from Facebook to Line. Line has chat and free-calling functionality, allowing instant response to questions posed by students. Fifth, three research presentations still are required because they help students to learn not only about the strengths and weaknesses of their research, but also about other research as well. Sixth, for statistical analysis, instructors taught statistical concepts and then had workshops with three adjusted (for complexity and time to complete) case studies. Instructors gave feedback to students during the workshops.

4.1.3 Collecting Data

To analyse whether the teaching process in this semester enhanced creative thinking in students, the following three methods were used to collect data for this research: (1) focus group, (2) research report at the end of the course, together with information posted by students on Line, the technology used for collaboration and (3) instructors' observations of students' learning.

4.1.4 Evaluating the Results

This research measured five components of creative thinking: innovation, feasibility, logic, flexibility, and clarity (Phillips, 2010). Innovation is the ability to generate new ideas for given problems. Feasibility is the ability to accomplish or bring about possible solutions to problems. Logic is the ability to think, especially in a reasonable manner while using good judgment. Flexibility is the ability to mix various theories in order to form new ideas. Clarity is the ability to elaborate or express an illustration of the argument. Because previous research indicated no weighting of these five components, it was decided to weight the five components equally. Each component is worth five points. Therefore, the total possible score for creative thinking is 25 points. The grading used for creative thinking ranges from 23-25 points for 'very, very good', 20-22 points for 'very good', 17-19 points for 'much better than average', 15-16 points for 'better than average but enough room for improvement', 13-14 points for 'better than average but just barely', and less than 12 points for 'needs lot of work to do'.

Two instructors evaluated the research reports from each group for creative thinking. The overall score for students this semester was 16 points. The score indicates that this semester's students are still better than average. But, in other words, the students still do not possess much creative thinking. In addition, Cohen's Kappa coefficient was used to calculate the consistency evaluation by the two instructors. Cohen's Kappa is 0.74, which is higher than 0.65 (Cohen, 1960). This result indicates the same direction of assessments by the instructors. The

complaints from students regarding case studies and ability to use statistics still need to be resolved. The reasons for unsatisfactory research papers are explained in more detail in Cycle 2.

4.2 Cycle 2: Testing Instructional Methods Developed in Cycle 1

4.2.1 Identifying the Problem and Planning the Teaching

The major problems encountered during cycle 1 is as follows: First, using case studies developed from the previous semester to teach students proved that these teaching methods are not appropriate. The way to teach research processes to students needed to be adjusted. The reasons are: (1) Time for students to complete case studies is limited. (2) Students lack motivation to do the case studies because they think they are difficult and time consuming. In addition, the case studies do not relate to their research projects and do not help students to make progress on them. Second, students complain about the comprehensive handouts. The handouts contain too much information regarding research processes which overloaded students' ability to learn. Third, group members have various interests and experiences that caused problems in working together and decision making. Fourth, technology communication still needed to be adjusted. Using Line to communicate still had problems. Line is not suitable if the network is not stable. In addition, Line does not have log files. The following information from focus group participants supports the above analysis:

“The case studies used in the workshops are not relevant to our research topics.”

“Though the workshops help us to understand experiences with research from the previous semester, they consume too much time without any benefits for our research topics.”

“The comprehensive handouts have too much information on research processes which confuse me.”

“When we consult with instructors regarding our research using Line, the network always disconnects, and we are frustrated by this. Meeting instructors face to face may be more appropriate.”

From the problems identified above, the teaching plans were revised as follows: First, instructors decided not to keep but to discard case studies from the previous semester. However, instructors retained the objectives of the case studies; i.e., encouraging students to successfully prepare problem statements, research objectives, research questions, conceptual models, and statistical analysis. Instructors designed case studies based on students' research projects assigned to be completed for this course. Students in each group worked on their research topics during classes. This allowed prompt responses from instructors when issues arose. Second, at the beginning of the semester, instructors asked students to form groups and establish roles for each member of the group, especially for the group leader. Third, a new technology communication was established. A proprietary collaborative webboard called ResYouAsk has functionality that allows students to post questions via discussion forums or chatting. In addition, this technology has log files so all questions and answers can be stored for further analysis.

4.2.2 Delivering the Teaching

Teaching methods in this cycle are as follows: First, instructors encouraged students to use their logical thinking as noted in cycle 1. Instructors decided to provide lecture notes, instead of providing comprehensive handouts. These notes will be distributed to students at the beginning of each class. The notes incorporate (1) research processes and their relationship to research problems, research objectives, research questions, and research hypotheses (2) how to properly do literature reviews together with how to read previous research articles (3) theory building (4) questionnaire development (5) sampling (6) statistics selection (7) statistical analysis and writing results (8) writing completed research report. Second, instructors continued to form students into groups, along with establishing roles for each member in the group. Third, apart from using the technology communication stated above, students are able to consult with instructors after class. Fourth, instructors summarized FAQs created from the collaborative webboard log files and distributed these to students. Fifth, the six case studies were changed to be based on the students' research projects required for this course.

4.2.3 Collecting Data

Three methodologies for data collection – focus groups with students, students' research reports at the end of research course, and information posted by students on the ResYouAsk collaborative webboard – were used to collect data for this research.

4.2.4 Evaluating the Results

Instructors concluded that instructional methods used in semester 2 are suitable for teaching a research

methodology course. In addition, the assessment of students' creative thinking from the two instructors showed satisfactory results. The assessment indicates that students in this semester got 19 points – much better than average. The consistency of assessment results of the two instructors calculated using Cohen's Kappa coefficient equals 0.79. In addition, students were motivated to attend class, especially workshops using students' research projects as case studies, because they could finish their research projects during classes. Problems of collaboration were reduced when the groups had group leaders who are responsible to review all work of group members.

5. Conclusions

This research was initiated because instructors in business research methodology determined that most students do not master the most important objective of learning how to do research – to develop new knowledge. From analysing conceptual models and statistical analyses in students' research reports, instructors observed that students do not apply logical thinking skills. The students do not analyse and synthesize previous research articles properly. Students do not analyse statistics with appropriate procedures. Therefore, this research tries to answer questions on how to create creative thinking in business research classes by encouraging students' logical thinking, motivation, and collaborative learning.

The research results indicate that best-in-practice teaching procedures for the research subject are as follows: First, instructors should encourage students to use logical reasoning during conceptual framework development and data collection. Instructors should exchange problem-solving experiences with students. Second, instructors should provide handouts for further reading, such as how to read prior research and utilize suitable statistics. Third, apart from lectures, workshops during classes should be conducted so students can practice doing research. This enables students to discuss issues with instructors face to face and immediately. Fourth, additional sessions after class should be set up to allow students to discuss problems that they encounter with their research projects. Fifth, students have to finish a research project by the end of the semester. Sixth, students should make oral presentations on their projects and experts invited to comment on them. Seventh, teaching tools, such as collaborative technologies (e.g., ResYouAsk webboard), need to be introduced so that instructors and students can communicate with each other while not in class. Furthermore, these tools should have functionalities which suit students' and instructors' requirements, such as being able to post illustrations in any form (e.g., flow charts, diagrams), create log files and incorporate both chat and discussion forums. The limitation on this study is that the participants may not be suitable representatives of the whole population. Other samples from other universities should be examined.

Both theoretical and practical contributions were developed from this research: (1) For theoretical contributions, the initial research results indicate that logical thinking affects the analytical skill. This skill, in turn, affects students' creative thinking. However, three additional factors (feedback, motivation, and collaboration) need to be considered in teaching research methodology. Based on these results, the authors propose model of creating creative thinking in students, as shown in Figure 3. (2) For practical contributions, instructors should conduct class lectures together with workshops, for discussing and exchanging thoughts regarding students' research. Collaborative tools between instructors and students should be utilized to conveniently provide feedback. In addition, these tools can be used to monitor the progress of students.

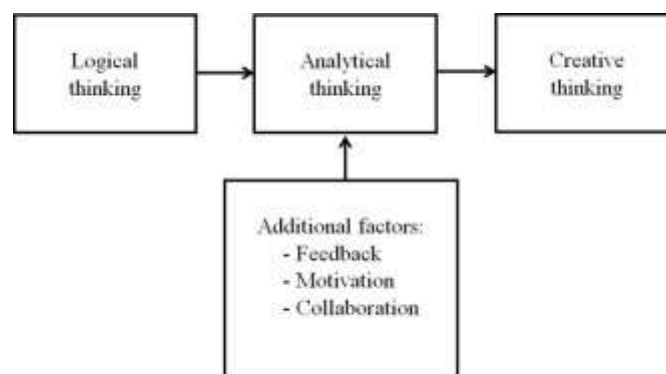


Figure 3. Model of Creating Creative Thinking

The research results indicate future research should be as follows: First, though this research incentivizes students by using scoring, this extrinsic motivation does not much impact the amount of effort students put into the research class. Students also have assignments from other classes that must be worked on, so workload

balance is required. Therefore, this research results encourage further study to examine both intrinsic and extrinsic motivation, as suggested by Ryan and Deci (2000). Second, 45 hours per semester for a research class may not be enough for students to adequately understand the subject, especially for analysing and synthesizing prior literature. Therefore, future research should be designed to consider extending classroom time beyond 45 hours. This may lead students to commit more time to do learn research methods. Third, due to the limitation of time, instructors have to assign students to work on research assignments in groups. Some students within groups may not dedicate sufficient time to do their group assignments. Therefore, instructors should encourage collaboration among members within groups, which may affect knowledge building (Hong, 2011). Finally, as the third-cycle students' creative thinking scores indicate much better than average, the reason may be that this research emphasizes only the attributes of students. The attributes of instructors may affect methods to increase students' creative thinking (Palaniappan, 2014). Therefore, future research may need to investigate attributes of instructors in more detail.

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Role of E-retailer's Image in Online Consumer Behaviour – Empirical Findings from E-customers' Perspective in Saudi Arabia

Zaid Ahmad Ansari¹, Faran Ahmed Qadri²

¹Associate Professor, Department of Business Administration, College of Business and Economics, Qassim University, Saudi Arabia

²Assistant Professor, College of Business, King Abdulaziz University, Rabigh, Saudi Arabia

Correspondence: Zaid Ahmad Ansari, Associate Professor, Department of Business Administration, College of Business and Economics, Qassim University, Saudi Arabia. E-mail: drzaidansari@gmail.com

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Abstract

Retailing business especially E-retailing is being considered one of the most dynamic and rapidly changing sectors of most of the emerging nations including Saudi Arabia. Nowadays, rapid changes in technological environment i.e. use of internet, availability of social media instruments etc. especially in e-retailing business have attracted the researchers to explore various issues of significance in online marketing. The objective of the present study is to demonstrate the significance and importance of e-retailers image on online shopping behavior of consumers. Structured and self-framed questionnaire consisting 15 questions (variables) with five (5) point Likert Scale has been considered as research instrument in the present study. To ensure the appropriateness of research instrument, Factor Analysis method has been used. Reliability of Questionnaire used in study was found very high (Cronbach Alpha value .956). After Factor Analysis procedure, two (2) factors consisting fifteen (15) variables i.e. 'Reliability Quality' with eight (8) variables and 'Payment Option' with seven (7) variables) has been extracted with 36.351 and 35.004 per cent variation respectively with overall variation of 71.355 per cent. All the variables extracted in factor analysis part have been found very much significant and important because their mean values were much higher than the midpoint. Among all the variables 'Range of Product Selection' has been found most dominant and 'Loyalty Programs of the e-retailer' has been found least important. Further discussion has been made in the study regarding analysis results. The results will be useful for the e-retailers especially in Saudi Arabia and middle-east and also outside the region. The e-retailers can plan their area of focus based on the findings of the study.

Keyword: Saudi Arabia, e-retailer, image, online shopping, consumer behaviour

1. Introduction

The retailing scenario in Saudi Arabia bears little resemblance to what it was even a decade earlier. Large retail operators in multiple formats are dominating the sector, and competition in the retail marketplace has been steadily increasing (Sohail, 2008). Retailing is one of the most dynamic and rapidly changing sectors of most emerging nations including Saudi Arabia. Saudi Arabia is the largest retail market in the Arabian Peninsula. The Kingdom enjoys the largest slice of the GCC retail industry and continues to be an outperformer in the hypermarket segment (Sohail, (2013). One of the most significant trends in the Saudi Arabia is the rapid spread of the internet and growth of social media applications (Ahmed and Bahaziq, 2013). Globally, Saudi Arabia ranks third in terms of smart phone penetration and 64th for internet penetration (Zaki 2013). Although the country is home to advanced Information and Communication Technology infrastructure, its citizens have adopted e-commerce at a relatively slow pace (Al Ghamdi et. al., 2011). There are various factors that may influence the ecustomers' behaviour. There are studies showing that not every website visitor becomes a shopper, so knowing what turns a website visitor into a shopper is a key issue for e-merchants. Two-thirds of online shoppers say that they will not shop on a poorly designed website, and wealthy online shoppers are even less likely to do so (Elliott & Speck, 2005). Among various factors one of the factors influencing the customer behaviour in general is the corporate image. Thus the researcher in this study empirically investigated how the image of an etailer, influence the ecustomers' behaviour.

2. Literature Review

According to Burt & Carralero-Encinas (2000), the retail store can be the key success factor, the competitive advantage of a retail company. The major source of competitive advantage for retailers is found in the value added delivered to customers, through the performance of functions or activities. One of the earliest definitions of store image was offered by Martineau in 1985, in his classical book "The personality of the retail store" (Mcgoldrick & Peter, 1990), which emphasized the need to consider not only more visible or measurable factors, but also the less tangible factors, such as the "personality" of the store. According to them, store image is the way in which the store is defined in the shopper's mind, partly by its functional qualities and partly by an aura of psychological attributes. An online store is a website that provides commodities or service for customers. online store image could be defined as the consumers' integrated perception of properties, functions and psychologies that affect their behavior when they interact with an online store (Chen & Teng, 2013). Engel, et. al., (1990) defined store image as the consumers' integrated perception of the property of one store.

In recent years, some scholars have argued that the traditional store image definition appears to be inappropriate for use with an online store because advances in technology have changed many factors of the traditional store image. Heijden & Verhagen (2004) developed factors of online store image that rely on the relatively well-established literature regarding the "traditional" store image definition. They followed Churchill (1979) well-known process of instrument development and, via an exploratory factor analysis, they obtained seven factors of online store image. They argued that consumers perceived online store image using seven components or attributes (usefulness, enjoyment, ease-of-use, style, familiarity, trust, and settlement performance), which collectively comprised online store image. The components were regressed on attitudes toward purchasing at the online store, revealed significant, direct influences from usefulness, enjoyment, trustworthiness, and settlement performance. Based on the literature, Elliott & Speck (2005) listed six factors of online store image (ease of- use, product information, entertainment, trust, customer support, and currency). Kim et. al., (2010) identified two attributes of web advertisements: perceived informativeness and entertainment.

In previous researches it had been found that a well-designed and easy-to-navigate website would be more likely to enhance web usability and convert a website visitor to an online shopper (McCloskey, 2003; Nathan & Yeow 2011; Ranganathan & Ganapathy, 2002). In the online environment, shoppers rarely interact with salespeople, so as the primary interface between the shoppers and online stores, the website plays a critical role. Some scholars viewed website quality as an important factor that affects consumers' initial online purchase behavior (Loiacono et. al., 2007; Zhou et. al., 2009). In their study, Gregg & Walczak (2010) found that higher website quality resulted in an increased purchase intention and price premiums. On the other hand, Verhagen & Dolen (2009) revealed that website quality was only one part of the online store image. Thus, an understanding of how online store image impacts on purchase intention will provide online store owners with comprehensive insights that they can use to increase their visitors' intention to purchase. Currently, the market getting more drenched, the consumers usually make their purchase decisions based more on the store image than on its tangible physical attributes (Giraldi, et. al., 2003). The retail stores have images of their own that serve to influence the perceived quality of products they carry and the decisions of consumers as to where to shop. Consumers also possess self-images, which are strictly associated with their personality. Consumers tend to shop in stores that have images consistent with their own self-images (Schiffman & Kanuk, 1997).

A number of researchers conducted researches to find the answer why people (e-)shop have looked to various components of the "image" of (e-)retailing (Wolfenbarger and Gilly, 2002). This may be a valid approach for two reasons. First, "image" is a concept used to signify our overall motives (Rohm and Swaminathan, 2004), as demonstrated by virtual ethnography (webnography) of "Web 2.0" blogs, social networking sites and e-word of mouth (eWOM) (Wright, 2008). The objective of this paper was to examine concepts of e-consumer behaviour, including those derived from traditional consumer behaviour. The study of e-consumer behaviour gained importance due to the proliferation of online shopping (Dennis et al., 2004; Harris and Dennis, 2008; Jarvenpaa and Todd, 1997). Consumer-oriented research has examined psychological characteristics (Hoffman and Novak, 1996; Lynch and Beck, 2001; Novak et al., 2000; Wolfenbarger and Gilly, 2002), demographics (Brown et al., 2003; Korgaonkar and Wolin, 1999), perceptions of risks and benefits (Bhatnagar and Ghose, 2004; Huang et al., 2004; Kolsaker et al., 2004), shopping motivation (Childers et al., 2001; Johnson et al., 2007; Wolfenbarger and Gilly, 2002), and shopping orientation (Jayawardhena et al., 2007; Swaminathan et al., 1999). The technology approach has examined technical specifications of an online store (Zhou et al., 2007), including interface, design and navigation (Zhang and Von Dran, 2002), payment (Liao and Cheung, 2002); information (Palmer, 2002; McKinney et al., 2002), intention to use (Chen and Hitt, 2002), and ease of use (Devaraj et al., 2002; Stern and Stafford, 2006). Thus the above analysis of the literature showed that there are various factors that influence the

shopping behaviour. One such strong factor is the image that influences their behaviour therefore in this research the researcher investigated the role and importance of corporate image in influencing the ecustomers behaviour.

3. Research Question

Is E-retailer's image significantly important in online shopping behavior of customers?

4. Objective of the Study

The objective of the study was to explore the importance of E-retailer's image in online shopping behavior of e-customers.

5. Framed Hypothesis

E-retailer's image is not significantly important in online shopping behavior of customers.

6. Research Methodology

The current study is quantitative and descriptive in nature. The study was based on primary data collected from respondents in Saudi Arabia through structured questionnaire containing fifteen close ended questions. The intensity of the response was measured on five point Likert scale from 5 to 1, where five meant extremely important and 1 equaled least important.

The questionnaire was developed with 15 variables taken from literature which were considered important for customers shopping online. These factors were important for ecustomers, therefore the eretailer's image for these factors were important. The identified factors were; Range of Product selection, Confidence in the Product quality, Timely delivery of the product, Prices of the product, Offers/promotions/discounts, Loyalty programs of the e-retailer, Customer service, Ease of transaction, Shipment/Delivery Charges, Clarity of the Information, Availability of Information, Payment options, Security of financial information, Return policy for a product, Refund on return of a product.

The objectives of the research were achieved through mean, which measured the importance of factor and factor analysis to identify the major factors. The reliability of the data was assessed through Cronbach Alpha.

7. Results

Reliability of the Instrument Used in Study

In Table: 1, the reliability of all the extracted fifteen variables has been demonstrated. From the table it is clear that in total the Cronbach alpha of the whole instrument has been calculated 0.956 which guarantees a very high inner consistency to the adopted instrument used in the present study.

Table 1. Reliability Test (Cronbach Alpha)

E-RETAILER (IMAGE)	.956	15
Range of Product selection		
Confidence in the Product quality		
Timely delivery of the product		
Prices of the product		
Offers/promotions/discounts		
Loyalty programs of the e-retailer		
Customer service		
Ease of transaction		
Shipment/Delivery Charges		
Clarity of the Information		
Availability of Information		
Payment options		
Security of financial information		
Return policy for a product		
Refund on return of a product		

7.1 Application of Factor Analysis

To analyse the reliability of instrument of the study factor analysis had been taken into the consideration. Factor Analysis procedure to test the questionnaire and to make the further process of analysis had been discussed in below points/paragraphs.

Table 2. E-Retailer's Image

	Mean	Std. Dev	Per cent of Respondents				
			SA	A	SWA	DA	SDA
Range of Product selection	4.28	0.94	54.25	25.75	15.25	3.25	1.50
Confidence in the Product quality	4.17	1.003	49.25	27.00	17.00	4.75	2.00
Timely delivery of the product	4.23	0.967	52.00	27.00	14.50	5.25	1.25
Prices of the product	4.19	0.955	47.50	31.75	14.50	4.75	1.50
Offers/promotions/discounts	4.20	0.944	48.25	29.75	17.00	3.50	1.50
Loyalty programs of the e-retailer	3.96	1.063	40.75	26.75	22.25	8.50	1.75
Customer service	4.07	1.054	45.75	27.25	17.50	7.50	2.00
Ease of transaction	4.18	0.991	50.75	24.25	19.00	4.50	1.50
Shipment/Delivery Charges	4.17	1.048	53.25	20.50	17.75	7.00	1.50
Clarity of the Information	4.13	1.062	50.25	23.75	17.50	6.00	2.50
Availability of Information	4.15	1.075	51.50	24.00	15.25	6.50	2.75
Payment options	4.18	1.057	51.75	26.25	13.75	5.600	3.25
Security of financial information	4.14	1.139	54.25	19.25	16.75	5.50	4.25
Return policy for a product	4.09	1.156	51.75	21.25	15.25	7.750	4.00
Refund on return of a product	4.12	1.152	53.25	20.25	16	6.00	4.50

7.1.2 Mean of Retained Factors

Since the survey questionnaire was based on five point Likert Scale and was positively structured ("Strongly Disagree=1, Disagree=2, Some What Agree=3, Agree=4, Strongly Agree=5), therefore, "score 2.5" was chosen midpoint and factors with mean score 2.5 or more were considered to be significant. According Table: 2, Mean of all variables are Range of Product selection (4.28), Confidence in the Product quality (4.17), Timely delivery of the product (4.23), Prices of the product (4.19), Offers/promotions/discounts (4.20), Loyalty programs of the e-retailer (3.96), Customer service (4.07), Ease of transaction (4.18), Shipment/Delivery Charges(4.17), Clarity of the Information (4.13), Availability of Information (4.15), Payment options (4.18), Security of financial information (4.14), Return policy for a product (4.09), Refund on return of a product (4.12) respectively. Because of higher than the average value (2.5), this shows that all extracted variables are very important and significant for e—retailer's image. In this case it is enough evidence to reject the null hypothesis that 'E-retailer's image is not significantly important in online shopping behavior of customers'. The factor with its consisting variables had been found very important for the image of E-retailers. Out of all these variables, variable named Range of Product selection holds highest mean value of 4.28 which indicates that customers are much keen about range of products and e-retailer should much focus on this issue. Analysis results indicate that variable named Loyalty programs of the e-retailer holding the mean value of 3.96 was found not much significant as compare to other variables. This indicates that customers are not much interested in Loyalty programs conducted by e-retailers. So E-retailers should make an alternate of this issue.

Table 3. Rotated Component Matrix - Features of Online Shopping (Image)

Features	Mean	Std. Deviation	Component		
			1	2	
Confidence in the Product Quality	4.17	1.003	.855	.267	Reliability Quality
Range of Product Selection	4.28	.940	.793	.224	
Timely Delivery of the Product	4.23	.967	.755	.263	
Prices of the Product	4.19	.955	.751	.331	
Offers/Promotions/Discounts	4.20	.944	.718	.401	
Loyalty Programs of the e-retailer	3.96	1.063	.691	.314	
Customer Service	4.07	1.054	.647	.479	
Ease of Transaction	4.18	.991	.646	.540	
Refund on return of a product	4.12	1.152	.191	.862	
Return Policy for a product	4.09	1.156	.247	.841	
Security of Financial Information	4.14	1.139	.342	.789	
Payment Options	4.18	1.057	.372	.786	
Availability of Information	4.15	1.075	.477	.741	
Clarity of the Information	4.13	1.062	.510	.701	
Shipment/Delivery Charges	4.17	1.048	.538	.663	
% of Variance			36.351	35.004	
Cumulative %			36.351	71.355	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in 3 iterations

7.1.3 Extraction and Rotation

To extract the factors principal component analysis method was used and for rotation Varimax with Kaiser Normalization was taken into consideration. After factor analysis the whole variables were extracted into two different groups or factors. The researcher had specified the names of extracted factors on his convenience and sense after reviewing the literatures and questionnaire statements. In Table: 3, it can be observed that two factors had been extracted with different no. of variables. First factor has been termed as 'Reliability Quality' consisting eight (8) different variables i.e. [Confidence in the Product Quality (M= 4.17, F.L.=.855); Range of Product Selection (M=4.28, F.L.=.793); Timely Delivery of the Product (M= 4.23, F.L.= .755); Prices of the Product (M= 4.19, F.L.= .751); Offers/Promotions/Discounts (M= 4.20, F.L.= .718); Loyalty Programs of the e-retailer (M= 3.96, F.L. .691); Customer Service (4.07, F.L.= .647) and Ease of Transaction (M= 4.18, F.L.= .646)]. Overall variance explained by these eight (8) variables in whole data set is 36.351 per cent that are too high. The second factor has been named 'Payment Option' consisting seven (7) variables i.e. Refund on return of a product (M= 4.12, F.L.= .862); Return Policy for a product (M= 4.09, F.L.= .841); Security of Financial Information (M= 4.14, F.L.= .789); Payment Options (M= 4.18, F.L.= .786); Availability of Information (M= 4.15, F.L.= .71); Clarity of the Information (M= 4.13, F.L.= .701) and Shipment/Delivery Charges (M= 4.17, F.L.= .663). In this case also overall variance explained by these seven (7) variables in whole data set is 35.004 per cent that are also much higher. Total variance explained by these two factors i.e. (Reliability Quality & Payment Option with fifteen (15) variables in both) has been calculated 71.355 per cent which shows a huge significance and relevance of these variables for e-retailers.

8. Empirical Findings

Through the analysis the findings of the study can be elaborated as follows:

With the help of factor analysis two factors had been extracted named Reliability Quality & Payment Option.

Above two factors consists fifteen (15) variables. Eight (8) variable with factor name 'Reliability Quality' and seven (7) variables with factor termed Payment Options.

Factor 'Reliability Quality' has been explaining 36.351 percent variation and factor 'Payment Option' is explaining 35.004 per cent variation in whole data.

Overall variation explained by both the factors (Reliability Quality & Payment Option with fifteen (15) variables in both) is 71.355 per cent in whole data.

Among all the variables, variable named Range of Product Selection (M=4.28, F.L. =.793) which belongs to 'Reliability Quality' factor has been found the most dominant variable and variable termed as Loyalty Programs of the e-retailer (M= 3.96, F.L. .691) which also belong to 'Reliability Quality' is considered to be the least significant variable among all fifteen (15) variables.

9. Discussion

As it is very clear that the basic objective of any business organization are (1) To attract the future customers; (2) To retain the existing customers; and (3) To grow or increase customer population, the present study result is very important and fruitful to fulfill these objectives. The analysis part of this study has revealed many significant issues to assist the e-retailers to improve their image so that customers can focus to a particular e-retailing business organization. The analysis part of study reveal that costumers are giving much emphasis on 'Reliability Quality' of any e-retailers company rather than 'Payment Option' because it is making more than 50 per cent variation in whole data. In this factor the very dominant variable that is 'Range of Product Selection' has been found most significantly important. In this case e-retailers should put much emphasis on the range of the products because in an online shopping while surfing on internet, customers search a variety of products ranges according to their convenient use and optimum price. If range of good products is increased the image of e-retailer could also be increased as shown in the study results. On the other hand, other variables in this study are also found very much significant and e-retailers are advised to put attention to other variables in this regard. Talking about the other variables in this factor which holds the mean values much higher than midpoint i.e. Confidence in the Product Quality, Range of Product Selection, Timely Delivery of the Product, Prices of the Product, Offers/Promotions/Discounts, Loyalty Programs of the e-retailer, Customer Service and Ease of Transaction are also very much considerable in present situation of online marketing. Now customers are much more aware about online market scenario due to very fast technological changes especially in information technology. They are inspecting, searching and making decisions about the quality of product; timely delivery facility of company; convenient and favourable prices; discounts, offers and other related facilities like guarantee and warranty; after sale services facility provided by companies/e-retailers, convenience and ease in transactions

of goods and services. These are some major areas on which an e-retailer has to focus and put much emphasis to strengthen these issues. Analysis part indicates that Loyalty Programs of the e-retailer is not much significantly effective as other variables in 'Reliability Quality' factor. This may happen because it is assumed in real life that nowadays a number of online companies are in online shopping business and they are making some loyalty schemes to retain their customers. Customers are going much choosy day by day and they search for their own convenient. It has less seen that a particular group or individual customer is loyal to a particular company. So e-retailers are advised to alter this issue and should put less emphasis in compare to other variables considered in the present study.

In analysis part second factor named 'Payment Option' is very much significant which makes approximately 49 per cent variation in whole data. All the variables in this factor are found very much significant and important because they also have higher mean value than midpoint. In this factors variable named Refund on return of a product, Return Policy for a product, Security of Financial Information, Payment Options, Availability of Information, Clarity of the Information, and Shipment/Delivery Charges are of great significance. Nowadays customers are much bothering about refund facility of e-retailing company if they are not satisfied with the product, product return policy in case of any dispute. Financial information security is also a burning issue nowadays in online shopping. Password protection and other confidential information are very important aspect with regard to customer in online shopping. Payment option whether cash on delivery or on the spot payment, debit/credit card payment, net banking payment options are also of great importance. Information clarity about product, its price and other terms and conditions are some issues which online customer wants to know in deep. In other words, it can be said that the variables taken in this study are all of immense significance according to the current situations in online shopping.

10. Conclusion

In the present study the researcher has made an attempt to show the importance of e-retailers image on online shopping behavior of consumers. For this purpose, researcher has framed a questionnaire having with five point Likert Scale. To check the instrument used in study whether it is appropriate or not in fulfilling the objectives of the study, researcher had conducted factor analysis method. In the factor analysis result shows that the instrument has Cronbach Alpha value of .956 which indicates that the instrument (Questionnaire) used in study in very much reliable and fit for the study in further analysis part. As a result of factor analysis two (2) factors with fifteen (15) variables i. e. 'Reliability Quality' with eight (8) variables and 'Payment Option' with seven (7) variables) has been extracted with 36.351 and 35.004 per cent variation respectively in whole data. Overall variation explained by these two factors was 71.355. All the variables extracted in factor analysis part has been found very much significant and important because their mean values were much higher than the midpoint. Among all the variables 'Range of Product Selection' has been found most dominant and 'Loyalty Programs of the e-retailer' has been found least important but significant for the image of e-retailers in online shopping behavior of customers.

11. Future Research Attempts

As this is true that every study has its limitations and much future work could be done in this regard. Present study only focuses on the importance of E-retailers image on online shopping behaviour of customers. In future attempts impact of extracted variables could be seen on online shopping behaviour of customers. In other cases, a comparative study could be made on behaviour of Saudi Citizens and outsiders in this regard. In the current study Saudi Arabia has been taken as place of study, other countries could also be considered for the same research. Relationship between all extracted variables could also be assessed. Some other literature could be explored to search those variables which are significant for e-retailers image which influences the customer's behaviour those purchases from online resources.

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Capital Structure Determinants in Family Firms: An Empirical Analysis in Context of Crisis

Stefania Migliori¹, Fabrizio Maturo¹, & Francesco Paolone²

¹Department of Management and Business Administration, “G. d’Annunzio” University of Chieti-Pescara, V.le Pindaro, n. 42, 65127-Pescara, Italy

²Department of Management and Business Administration, University of Naples, Via Generale Parisi, n. 13, 80132- Naples, Italy

Correspondence: Stefania Migliori, Department of Management and Business Administration, “G. d’Annunzio” University of Chieti-Pescara, V.le Pindaro, n. 42, 65127-Pescara, Italy.

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Abstract

The purpose of this paper is to investigate the capital structure of family firms in a context of crisis. Specifically, it aims to discover whether and how the determinants of their capital structure have a different impact on firms' leverage before and during the recent global financial crisis. Considering the *pecking order theory* (POT), *trade-off theory* (TOT), and *agency theory* (AT), this study analyzes 1,502 Italian medium family firms comparing the pre-crisis (2005-2007) and crisis (2008-2010) periods. This research shows that that current liquidity, asset structure, and agency costs are the most important variables in influencing medium family firms' leverage, in both the pre-crisis and crisis periods. Moreover, during the crisis, agency costs increase and have a negative influence on the short-term leverage highlighting that crisis contingencies influence the agency-based effects on family firm's leverage. Furthermore, our findings highlight that a more exhaustive understanding of family firms' capital structure can be achieved through the combined use of different theories.

Keywords: agency costs, capital structure, family firms, financial crisis

1. Introduction

Capital structure decisions are key factors for the development and survival of firms (Mahéroul, 2004) and for the economic growth. Firms' decisions about debt or equity assumed great importance during the recent global financial crisis triggered in 2008¹. This crisis produced important financial effects such as failure of banks and financial intermediaries, credit rationing, reduced investment and consumption, and a long downturn in the economic life cycle (Aiyar, 2015). This severe economic and financial context has influenced firms' financial behaviour, and thus understanding which factors influence firms' financial behavior has become increasingly relevant for management studies and policy makers.

Financial behavior of family firms - the most ubiquitous form of business organization in any world economy (La Porta et al., 1999) - has become a topic of growing interest because many research have highlighted that family firms' financial decision-making is unique and very different from non-family firms (Anderson et al., 2003; Koropp et al., 2013; Crespi & Martin-Oliver, 2015; Steijvers & Voordeckers, 2009; Wu et al., 2007). Family firms are strongly dependent on self-financing, and they often forgo growth opportunities due to their reluctance to issue external funds in order to safeguard family control (Crocì et al., 2011; Gonzalez et al., 2013; Mahéroul, 2004; Romano et al., 2000; Wu et al., 2007) and protect their socioemotional wealth (Gomez-Mejia et al., 2007). Family firms' financial choices appear to be the result of a trade-off between the need to increase debt for reducing the risk of losing control and the need for reducing debt to minimize the risk of failure (Gottardo & Moisello, 2014).

Previous studies have improved our understanding of capital structure decisions of family firms, but they have provided only a partial explanation of family firms' financial behavior. To the best of our knowledge, and except for the study of Crespi and Martin-Oliver (2015) which compares family and non-family firms' ability to access

¹For simplicity reasons, in this study, the term “crisis” and “global financial crisis” are used interchangeably.

debt during the recent global financial crisis, previous research has studied family firms' financial behavior under normal market conditions (where risk and firms' performances are relatively stable). Then, we still little know about the effect of the global crisis on family firm's capital structure. However, several studies on non-family firms highlighted that capital structure may be sensitive to contextual factors (Antoniou et al., 2008; Venanzi & Naccarato, 2017) and to an economic downturn (Antoniou et al., 2008; Danso & Adomako, 2014; Frank & Goyal, 2009; Micheales et al., 1999). In particular, recent studies (e.g. Danso & Adomako, 2014; Van Hoang et al., 2018) have showed a strong empirical evidence of the effects of the recent financial crisis on firms' capital structure. Hence, we aim to address this knowledge gap in the field of family business by analyzing *whether* and *how* the determinants of family firms' leverage change their influence during the crisis. Specifically, we investigate crisis (2008-2010) and pre-crisis (2005-2007) periods for comparing the influence of the capital structure determinants on family firms' leverage. Following Myers (2001), who suggested that there is not yet a unique generally accepted perspective for explaining financial structure decisions, we refer to the most used capital structure theory, such as the *pecking order theory* (POT) (Myers, 1984; Myers & Majluf, 1984), *trade-off theory* (TOT) (DeAngelo & Masulius, 1980), and *agency theory* (AT) (Berle & Means, 1932; Jensen et al., 1976), in order to analyze family firms' capital structure.

To test our hypotheses, we focus on a sample of 1,502 Italian medium family firms (unlisted). Italy is a very interesting environment in which to test capital structure choices of family firms; its industrial system is characterized by the prevalence of small and medium firms (85% of total firms) which are, on average, the most indebted in the EU (European Commission, SBA, Italy, 2013). Moreover, Italy is characterized by a banked-oriented financial system (with strong borrower-lender relationship) and an underdeveloped stock market with the dominance of unlisted firms, which are very different from listed companies in terms of their access to capital market (Crespi & Martin-Oliver, 2015), and thus they could be differently affected by the financial crisis (Danso & Adomako, 2014, p. 1171). Moreover, this study focuses only on medium sized family firms because differences between small and medium firms might arise regarding their preferences, risk aversions, bankruptcy, and abilities to access the debt (Chittenden et al., 1996; Cressy & Olofsson, 1997; Köksal & Orman, 2015).

Our results show that current liquidity, asset structure, and agency costs are the most important variables in influencing medium family firms' leverage, in both the pre-crisis and crisis periods. Moreover, during the crisis, agency costs increase and have a negative influence on the short-term leverage. Our findings also highlight that family firms have an order of preference between short-term and long-term debts as assumed by the POT; however, during the crisis, their short-term debt decreases whereas the long-term debt tends to increase.

Our study offers many contributions to the literature regarding the capital structure of family firms. First, it provides a more fine-grained understanding of capital structure determinants in family firms by expanding the knowledge on this topic in a context of crisis that has not been fully explored. Specifically, this study highlights that not all the most used variables of POT and TOT are relevant in explaining family firms' capital structure, and that during the crisis, the impact of capital structure determinants on firms' leverage is different from the pre-crisis period. This finding suggests that the explanatory ability of different theories depend on contingent factors, such as the economic cycle. Secondly, our study shows that no single theory can fully explain family firms' leverage and that a more accurate explanation of capital structure determinants of family firms can be achieved through the combined use of different theories. Finally, regarding the agency theory, our study contributes to better understand the contingencies that could influence the agency-based effects in family firms (Zahra, 2005).

The remainder of the paper is organized as follows: Section 2 reviews the literature on capital structure determinants in family firms referring to POT, TOT, and AT, and develops our hypotheses; Section 3 describes the dataset, sample selection criteria, variables, and descriptive statistics; Section 4 shows our regression models and results; finally, Section 5 presents the discussion and conclusion.

2. Capital Structure and Its Determinants: Theoretical Frameworks and Hypothesis

2.1 Theoretical Frameworks for Family Firms' Capital Structure

The literature on family firms' financial behavior points out that they follow a "*peculiar financial logic*" (Gallo et al., 2004, p. 315) characterized by the owner-manager's orientation with respect to risk, growth, ownership control, and the intention to protect the socioemotional wealth of family members (Gomez-Mejia et al. 2007). Specifically, existing empirical research on family firms' capital structure has highlighted that: a) both economic and non-economic reasons influence their financial decisions (Gallo et al., 2004; Koropp et al. 2013); b) they are strongly dependent on self-financing and adopt conservative financial strategies (Romano et al., 2000); and c) they often forgo growth opportunities due to their reluctance in issuing new external resources to safeguard

family control on the business (Crocì et al., 2011; Gonzalez et al., 2013; Mahéroul, 2004; Romano et al., 2000; Wu et al., 2007). However, these empirical studies on family firms have given mixed results about the main determinants of their capital structure (Coleman & Carsky, 1999; Romano et al., 2000; Lopez-Garcia et al., 2007).

In our study, we refer to the most used theory (POT, TOT, and AT) to explain the capital structure of family firms. The market timing theory (Baker & Wurgler, 2002) is not considered because family firms are typically privately held and are reluctant to raise external equity in order to maintain family control of the business (Crocì et al., 2011; Romano et al., 2000).

The POT (Myers, 1984; Myers & Majluf, 1984) considers the existence of asymmetric information between internal and external financiers; it suggests that companies usually adopt schematic processes and hierarchical choices among different funding sources. Specifically, firms will choose financing based on the following order of descending preference: internal funds, debt, and equity. This financial logic also reflects the objective of owners to maintain the control of the business and operational independence from external financiers. This theory is particularly appropriate to explain the debt-equity choice of family firms. Indeed, several studies have highlighted their reluctance to use debt or new external equity due to their intention to safeguard the family control on the business and protect the business for future generations (Crocì et al., 2011; Gonzalez et al., 2013; Mahéroul, 2004; Romano et al., 2000; Wu et al., 2007). Hence, family firms' financial behavior appears to fit with the POT framework (Poutziouris, 2001).

According to the TOT (Modigliani & Miller, 1958, 1963), firms' financial choices are driven by the search of an optimal level of indebtedness; this optimal target is achieved by optimizing the trade-off between tax benefits associated with the debt and risks of failure caused by debt increase (DeAngelo et al., 1980). From this perspective, capital structure decisions are driven by the intention to balance the cost and benefits associated to the leverage. In particular, the TOT takes into account fiscal and financial distress issues in order to explain the debt-equity choices of firms: firms should prefer debt due to the tax deductibility of financial interests and if their higher size reduces the probability of bankruptcy. Existing research suggests that family firms would target their debt level to maintain the family control of the business. Moreover, other existing empirical research highlights that family firms seem to pursue indebtedness target ratio (Bauweraerts & Colot, 2012) and can approach their debt target ratio more quickly than non-family firms (Lopez-Gracia & Sanchez-Andujar, 2007).

According to the AT (Berle & Means, 1932; Jensen et al., 1976), agency costs are caused by information asymmetries and risk aversion, and they may arise when agents' behavior is not consistent with the principals' interest. In the literature, it is widely held that agency costs represent a key determinant of firms' capital structure (Jensen & Meckling, 1976; Jensen, 1986). Indeed, the "free-cash flow" hypothesis (Jensen, 1986) points out the disciplinary role of debt in reducing the cash flow that may be used at the discretion of managers; this is due to the threat of liquidation or the pressure in generating cash flow to service the debt.

In the context of family firms, traditional agency theory assumes that the conflicts between shareholders and managers should be minimal, or not existent, due to their concentrated ownership and presence of owners-managers (Fama & Jensen, 1983; Jensen et al., 1976). Following this perspective, when managerial ownership grows, interest in reducing risks leads to decrease the use of debt (Brailsford et al., 2002). Instead, when family owners are not involved in management, they may prefer to increase debt to reduce manager's opportunistic behaviors (Stulz, 1988). However, recent research has shown that family involvement in the business may lead to other kinds of agency problem (Anderson & Reeb, 2003; Chrisman et al., 2004; Schulze et al., 2001, 2003a, 2003b; Villalonga & Amit, 2006) engendered by self-control and altruism (Lubatkin et al., 2005). In addition, Blanco-Mazagatos et al., (2007) shows that family involvement across generations may determine agency conflicts which may influence family firm's capital structure choices. Consequently, we can assume that agency costs may also affect capital structure choices in family firms.

2.2 Determinants of Family Firm's Capital Structure

Empirical research has highlighted that the theoretical construct developed by the theories on capital structure need to be proxied indirectly by a set of firms' characteristics (Cassar & Holmes, 2003, p. 127) (such as size, profitability, asset structure, growth, etc.). Moreover, the literature suggests that debt-equity choices are related to firms' characteristics which are specific for each firm (Proença et al., 2014), and that there is not yet a unique generally accepted perspective for explaining decisions on firms' financial structure (Myers, 2001). Consequently, the choice of appropriate explanatory variables of capital structure may be difficult and controversial (Harris & Raviv, 1991; Titman & Wessles, 1988). Taking into account these aspects, we consider that previous studies can help us in defining the most appropriate proxy variables needed in our study. Thus, we

refer to those determinants most used in previous studies (e.g. Kumar et al., 2017; Rajan & Zingales, 1995) and we give particular attention to previous empirical research on capital structure determinants in family, unlisted, and small and medium firms (e.g. Ampenberger et al., 2013; Cassar & Holmes, 2003; Coleman & Carsky, 1999; González et al., 2013; Gottardo and Moisello, 2014; Lopez-Gracia & Sánchez-Andújar, 2007). Following this literature, we identified the most commonly adopted determinants of medium family firms' capital structure as follows: firm size, firm age, profitability, asset structure, and current liquidity. Moreover, from the perspective of the agency theory, we extend the traditional proxies of agency costs, which have been tested in non-family firms, to the field of family firms due to the absence, to date, of specific operational measure developed for family firms' agency costs. This selecting variable approach allows us better identifying the possible capital structure determinants of medium family firms and comparing our results with other existing empirical research on capital structure of family firms.

We investigate the relationship between these selected determinants and the capital structure of family firms comparing the pre-crisis and crisis periods. Specifically, we select the most severe period of crisis which affected the Italian economy (2008-2010) (European Commission, SBA Italy, 2014), and compare it with the pre-crisis period (2005-2007). The financial crisis (started in 2008) generated a long period of economic recession in Italy, as in many other European countries (Berkowitz et al. 2015). This context was characterized by an increase of uncertainty and instability of market with a consequent uncertainty and decline in long-term investments (Demirguc-Kunt et al. 2015). This financial and economic turbulence had important effects on the Italian banking system. In particular, the cost of capital increased, and the criteria adopted for the loans to businesses became more stringent (Banca d'Italia, 2010). Moreover, the economic recession reduced the level of turnover and profits of many businesses in manufactory industry (Centro Studi Confindustria, 2008) limiting their ability to self-financing.

Consequently, these conditions could modify the influence of capital structures determinants in family firms. Indeed, family firms' owners generally adopt conservative financial strategies and use a mix of personal and internal funds instead of external resources (Koropp et al., 2014; Poutziouris, 2001). They consider companies as an asset for future generations, and this is emphasized, during the crisis, when the risk of failure and loss of control are high. Effectively, they follow reasons related to family concerns rather than economic and financial logic (Koropp et al., 2014). Nevertheless, an internal financial strategy may be difficult to pursue during a crisis due to the decrease in profitability and liquidity, which are key factors in influencing the financial behavior of family firms (Blanco-Mazagatos et al., 2007; Koropp et al., 2014). This contingency should push family firms to use more external financial resources during the crisis period, but this financial strategy could be obstructed by the credit rationing in the capital market

Based on such consideration, we expect that crisis influence capitals structure choices of family firms, and thus the determinants of family firms' leverage may change their influence (degrees of influence, significance or sign) during the crisis period compared to non-crisis period.

2.3 Hypotheses Development

Age

The number of years since the business was founded can influence firms' capital structure (Coleman & Carski, 1999; Romano et al., 2000). According to the POT, the greater the age of firms, the greater the chance that over time firms have accumulated and saved funds reducing its resorting to debt (Coleman & Carski, 1999; López-Gracia & Andújar, 2007). Existing research has shown variations in this relationship among different countries, and particularly, the existence of a negative association between age and leverage in Italian SMEs (Hall et al., 2004). The argumentations proposed by the POT are also relevant in a context of crisis due to the credit rationing. Then, we formulate the following hypotheses:

H1a: *During non-crisis period, family firm's age is negatively related to leverage.*

H1b: *During crisis period, family firm's age is negatively related to leverage.*

Size

From the TOT perspective, some studies suggest the existence of a positive relationship between firm size and debt due to the more diversification and then less risk of financial distress of large firms (Rajan & Zingales, 1995). On the other hand, the POT predicts the existence of a negative relationship because larger firms face lower adverse selection and then can more easily resort in issuing new capital (Köksal & Orman, 2015). Existing empirical research on medium family firm highlights the existence of a negative relationship between size and leverage (e.g. Gottardo & Moisello, 2014). Indeed, in family firms, the increase in size can enlarge their ability

to generate internal resources, supporting their self-financing logic (above described). Moreover, Anderson and Reeb (2003) have shown that family firms have less need to engage in corporate diversification to reduce firm risk. Family firms reduce the business risk using financing forms with low probabilities of default, and specifically preferring equity (Anderson & Reeb, 2003, p. 656-657). Thus, the proposition of the TOT does not seem to describe well the financial behavior of family firms.

During the crisis, the larger the size of firms, the greater the ability to cope with its effects (such as the reduction in revenues and profitability, and the uncertainty of the market). Indeed, larger firms may have more internal resources or accumulated funds and more tangible assets that can be used as collaterals to access the debt. Therefore, we formulate the following hypotheses:

H2a: *During non-crisis period, family firm's size is negatively related to leverage.*

H2b: *During crisis period, family firm's size is negatively related to leverage.*

Profitability

According to the TOT, there is a positive relationship between firms' profitability and leverage due to the lower risk of default and need to offset corporate tax. On the other hand, the POT predicts the existence of a negative relationship between profitability and leverage, as profitable firms can use retained earnings to finance their investments rather than employing debt. The literature regarding family firms highlights that profitability is a key factor in influencing their financial behavior (Blanco-Mazagatos et al., 2007; Koropp et al., 2014) due to their peculiar financial logic. Indeed, high profitability can support their financial strategies based on self-financing (as described above). Existing research on family firms' capital structure (in non-crisis period) supports the existence of a negative relationship between firms' profitability and debt (Crocì et al., 2011; López-Gracia & Andújar, 2007; Santos et al., 2014).

During the crisis, the higher information asymmetries between investors and managers (Mishkin, 1991, 1992) can strengthen the preference in using internal financial resources. Moreover, empirical studies on capital structure of small and medium firms during crisis confirm the existence of a negative relationship between profitability and debt level (Balios et al., 2015; Proença et al., 2014), and also for medium family firms (Gottardo & Moisello, 2014). Hence, we formulate the following hypotheses:

H3a: *During non-crisis period, family firm's profitability is negatively related to leverage.*

H3b: *During crisis period, family firm's profitability is negatively related to leverage.*

Asset structure (tangible asset)

Many empirical researches have generally shown a positive relationship between asset tangibility and firms' leverage (Chittenden et al. 1996; Michaelas et al., 1999; Van der Vijst & Thurik, 1993). This positive association is due to the fact that tangible assets can be used as a collateral for a easier access to debt (long term debt) (Frank & Goyal, 2009), despite the POT assumes a negative relationships because the low information asymmetries related to tangible assets make more convenient the use of new equity (Harris & Raviv 1991; Kösal & Orman, 2015). Empirical research on family firms' capital structure shows a positive association between tangible asset and leverage (Amperberg et al., 2013; Gottardo & Moisello, 2014).

During crisis period, the use of tangible assets as collateral may be critical due to the market uncertainty and the increase of asymmetries information between borrowers and lenders. However, previous studies on capital structure of small and medium firms in a context of crisis show the existence of a negative association between tangible assets and leverage, especially with long-term leverage (Balios et al., 2016; Muijs, 2015; Proença et al., 2014). Moreover, for family firms, the use of tangible assets as collateral for new debt may create a strong exposure of family assets due to the close overlap of family members' wealth and the business. The uncertainty and risk related to the crisis may increase this risk for family firms, and thus they may be reluctant to use tangible assets as collateral due to their fear of losing shareholding rights and discretion to act in favor of the non-family investor. Hence, we formulate the following hypotheses:

H4a: *During non-crisis period, family firm's asset structure is positively related to leverage.*

H4b: *During crisis period, family firm's asset structure is negatively related to leverage.*

Current liquidity

Existing research suggests that firms with higher liquidity use them to finance its investments (Ozkan, 2001). Indeed, according to the POT, an increase in current liquidity reduces the need to resort to debt, and thus a negative relationship between current liquidity and firms' leverage is expected. Moreover, current liquidity ratio

can measure the short-term solvency of a firm. Indeed, a low level of liquidity may indicate a low capacity of a firm to cope with its debts, and therefore a firm with low liquidity can be seen by external lenders as a firm with greater potential of default (Proença et al., 2014). Previous studies on the capital structure of family firms have highlighted the existence of a negative relationship between current liquidity and leverage (Anderson and Reeb, 2003; Croci et al., 2011; Gottardo & Moisello, 2014); in effect, this is supported by the argumentations of family firms' preference for the use of internal resources compared to the use of debt.

During a crisis period, firms may have difficulty in reaching high levels of liquidity as debtors can delay payments due to the decline in sales, profitability, and credit rationing. Consequently, firms' capacity to meet their debt obligations on time may decrease reducing the ability to access additional debt. Then, we formulate the following hypotheses:

H5a: *During non-crisis period, family firm's current liquidity is negatively related to leverage.*

H5b: *During crisis period, family firm's current liquidity is negatively related to leverage.*

Agency costs

Existing research highlights that, in family firms, there is more use of debt when agency conflicts between ownership and management increase because of altruism problem (Blanco-Mazagatos et al., 2015). In particular, when agency costs increase there is an enlargement of firms' capital structure following a peaking order in funding preference. Thus, we expect that, in non-crisis period, an increase of agency costs should lead to an increase in the use of debt.

During a crisis, the dynamics of agency conflicts may change due to the uncertainty and more risk aversion. In family firms, the risk of failure represents a personal failure for family owners, including the risk of losing everything (Gallo et al., 1996). Then, family owners may forgo the temptation to expropriate resources (Attig et al., 2015) transferring losses on minority shareholders or conversely to assist firms with their personal resources (Friedman et al., 2003). This behavior can produce agency conflicts between family and non-family shareholders, and non-family managers, which instead may prefer to invest in risky projects because they could enjoy the benefits, without suffering the risk of failure. Thus, we hypothesize that agency costs should increase during the crisis. High agency conflicts may lead to an increase in leverage to discipline the discretionary behavior of management; however, a high leverage, during the crisis period, could even amplify the probability of bankruptcy of firms, and thus family owners may prefer acting cautious and do not increase firms' leverage. Therefore, we formulate the following hypothesis:

H6a: *During non-crisis period, agency costs have a positive influence on family firm's leverage.*

H6b: *During crisis period, agency costs have a negative influence on family firm's leverage.*

3. Data

3.1 Dataset

Our data are gathered from the AIDA database that is the Italian provider of the Bureau Van Dijk European Database. It contains detailed information with up to ten years of history of approximately 1,170,000 Italian listed and non-listed companies. We select only medium firms and follow the European Commission (2005) definition. According to this criterion, a firm is considered as "medium" if it satisfies simultaneously the following characteristics: 1) turnover less than, or equal to, € 50 million (or total assets less than, or equal to, € 43 million); 2) number of employees less than, or equal to, 250 units; and 3) not classified as "small" enterprises (simultaneously less than 50 employees and turnover less than, or equal to, € 10 million, or total assets less than, or equal to, € 10 million). To meet this definition, we choose only those companies that maintained this status for the whole period. In addition, we focus only on medium family firms with the following features: a) unlisted limited, limited liability or companies limited by share; b) operating in the manufacturing industry (classes 10-30 of ATECO code); and c) not included in a bankruptcy process.

We consider only firms operating in manufacturing industry because: a) they represent about 40% of medium Italian firms (ISTAT, 2011); b) companies in this sector have a capital structure that differs from other sectors (Köksal & Orman, 2015; Romano et al., 2000; Tse & Rodgers, 2014) and c) firms of the same industry are more similar according to their capital structure (Romano et al., 2000). The above criteria provide a sample of 1,841 firms. To select family firms, we verify whether firms were family owned by multiple family members of the same family (the majority of equity owned by the family) (Miller et al., 2008; Zahra, 2005). We also adopt the "surname" criterion and verify the uncertain cases (50.01% of equity owned by persons with different surnames) using the balance sheets documents taken from the Chambers of Commerce. The doubtful cases, despite this

additional control, are not considered; furthermore, companies without all data available for the multivariate analysis are excluded. After this selection, a final sample of 1,502 firms across six years is available for the analysis.

3.2 Variables Description

We investigate family firms' capital structure adopting three different measures: the total leverage (TDL = total debt/total asset), long-term leverage (LTL = long-term debt/total asset), and short-term leverage (STL = short-term debt/total asset). The decomposition of leverage is appropriate because Italian SMEs are characterized by a strong preference for the short-term debt; hence, the use of a single index may hide the differences between short and long-term leverage (Chittenden et al., 1996; Van de Wijst & Thurik, 1993). Furthermore, the ratio on total asset is more appropriately than using liabilities because the former better explains the risk of firm default (Michaelas et al., 1999; Rajan & Zingales, 1995). The dependent variables are considered at 2007, for the pre-crisis period, and at 2010, for the crisis, respectively.

The independent variables used in our study are summarized in Table 1. Following Singh and Davidson (2003), and Ang et al. (2000), for *agency costs*, we consider asset utilization and discretionary expenses as proxies. The former is the ratio of annual sales to total assets and captures the inefficient utilization of assets due to opportunistic management behavior, or to poor monitoring systems. Thus, we stress that the asset utilization ratio is inversely related to the level of agency conflicts. The latter is the ratio of discretionary operating expenses to total sales. It assesses the efficiency of operating costs management; hence, it could be a signal that agents expropriate shareholder's wealth for personal perquisite consumption, or inefficient investments. Thus, the ratio of discretionary operating expenses is directly related to the level of agency costs.

The independent variables are collected a time t-1 with respect to the dependent variables; specifically, they are averages of their values at 2005 and 2006 for considering the whole pre-crisis period, and at 2008 and 2009 for taking into account the crisis, respectively.

Starting from the predictors introduced in Section 2.3, we proceed to the selection of the final set of independent variables using the “backward elimination” criteria (Sparks et al., 1985). However, we also tested the stepwise regression, based on the AIC criterion, and it led to the same results. Differently from other research findings, profitability is not significant in our analysis, neither before, neither during the crisis. Moreover, the insertion of this variable in our models brings to worse performance in term of explained variability and AIC. Thus, PROFIT has been deleted from our final models. Based on the above criteria, we refer to a logarithmic transformation of both dependent and independent variables.

Table I. Variables Description

Variables	Abbreviation	Measure	Literature
Leverage	TDL	total debt/total asset	Kösal & Orman (2015); Rajan & Zingales (1995); Michaelas et al. (1999)
	STD	short-term debt/total asset	
	LTD	long-term debt/total asset	
Size	EMPL	the number of employees	Köksal & Orman (2015)
	SALES	sales	
Age	AGE	the number of years since the company has been founded	Mac an Bhaird & Lucey (2010)
Profitability	PROFIT	earnings before interest and tax/total asset	Degryse et al. (2012)
Asset structure	A_STURC	tangible assets/total asset	Cassar & Holmes (2003)
Current liquidity	CUR_LIQ	current asset/current liabilities	Mateev et al., 2013
Agency costs	AUR	annual sales/ total asset	Singh & Davidson (2003); Ang et al. (2000)
	DER	discretionary operating expenses/total sales	

3.3 Descriptive Statistics

Table II shows the descriptive statistics of the variables; it highlights that TDL and STL decrease, on average, from the pre-crisis to the crisis period, while LTL increases. We observe that family firms prefer STL rather than LTL. CUR_LIQ does not undergo a large variation from the first to the second period, but its standard deviation strongly increases. In contrast, SALES decreases, on average, from 17,954,290 to 17,526,648 euro. A_STURC shows an increase of 0.071 from the pre-crisis period to the crisis. AUR decreases slightly during the crisis, while DER does not significantly change, thus, agency costs increase; however, their standard deviations largely decrease, indicating that family firms' behavior, during the crisis, is homogeneous with respect to this agency cost.

Table II. Descriptive statistics

<i>Variables</i>	Min	Max	Mean	Sd
<i>Explanatory Variables for POT</i>				
AGE	2	99	28.92	14.85
<i>Explanatory Variables for POT and TOT</i>				
EMPL	3	236	71.94	40.11
SALES PRE CRISIS	3,870	78,811	17,954	9,107
SALES CRISIS	3,449	86,684	17,526	9,391
A_STURC PRE CRISIS	0.0108	0.7935	0.2201	0.1361
A_STURC CRISIS	0.0077	0.8445	0.2916	0.1663
CUR LIQ PRE CRISIS	0.2700	3.7950	1.0420	0.4626
CUR LIQ CRISIS	0.2450	5.4450	1.0962	0.5704
<i>Explanatory Variables for AT</i>				
AUR PRE CRISIS	0.3965	3.5190	1.2567	0.4427
AUR CRISIS	0.7859	1.2014	0.9750	0.0483
DER PRE CRISIS	0.1865	3.5274	1.1014	0.4588
DER CRISIS	0.7786	1.3985	1.0479	0.1085
<i>Dependent Variables</i>				
TDL PRE CRISIS	0.1754	0.9664	0.6445	0.1701
TDL CRISIS	0.1253	0.9575	0.5658	0.1827
STL PRE CRISIS	0.1604	0.9671	0.5456	0.1623
STL CRISIS	0.0935	0.9336	0.4515	0.1704
LTL PRE CRISIS	0.0000	0.5826	0.0989	0.0982
LTL CRISIS	0.0000	0.5401	0.1143	0.1024

Notes. Values in 000/euro. N=1,502 family firms.

Table III displays the correlation matrix; it shows that the leverage is influenced by: age (AGE), employee (EMPL), sales (SALES), current liquidity (CUR_LIQ), asset structure (A_STURC), asset utilization ratio (AUR), and discretionary operating expenses ratio (DER). Specifically, CUR_LIQ has high correlations with TDL (-0.717 before the pre-crisis, and -0.695 during the crisis) and STL (-0.673 before the pre-crisis, and -0.619 during the crisis). EMPL, AGE, and A_STURC are negatively correlated with TDL and STL, in both periods. The variables AUR and DER, before the crisis, show positive correlations with TDL and STL; however, during the crisis, the correlation between AUR and, both TDL and STL, increases, while the correlation between DER and, both TDL and STL, decreases. Instead, SALES is slightly positively correlated with TDL and STL, in both periods. The first empirical evidence is that the correlation, between the independent variables and TDL, are influenced by STL (short-period component of TDL). Indeed, neither the variables usually considered by POT and TOT, neither the agency costs, are correlated with LTL; only AUR, DER, and SALES, during the crisis, are lightly correlated with LTL. This lack of correlation certainly would deserve further investigation in future research regarding the capital structure of family firms.

Table III. Correlation matrix of the transformed variables pre-crisis and during the crisis

Pre-crisis										
	TDL	STL	LTL	AGE	EMPL	CUR LIQ	SALES	A_STURC	AUR	DER
TDL										
STL	.838**									
LTL	.055*	-.043								
AGE	-.189**	-.177**	-.022							
EMPL	-.177**	-.229**	-.036	.152**						
CUR LIQ	-.717**	-.673**	-.019	.087**	.014					
SALES	.131**	.123**	-.023	.062*	.159**	-.044				
A_STURC	-.057*	-.242**	.028	.095**	.173**	-.185**	-.12**			
AUR	.142**	.334**	-.036	-.12**	-.28**	.091**	.168**	-.253**		
DER	.303**	.258**	-.007	.049	.014	-.334**	.027	.035	-.088**	
During the crisis										
	TDL	STL	LTL	AGE	EMPL	CUR LIQ	SALES	A_STURC	AUR	DER
TDL										
STL	.836**									
LTL	.076**	-.089**								
AGE	-.192**	-.208**	-.028							
EMPL	-.148**	-.223**	.015	.152**						
CUR LIQ	-.695**	-.619**	-.003	.087**	-.010					
SALES	.160**	.183**	-.083**	.051*	.066*	-.013				
A_STURC	-.151**	-.327**	-.024	.133**	.161**	-.207**	-.113**			
AUR	.193**	.407**	-.093**	-.14**	-.30**	.146**	.230**	-.379**		
DER	.075**	.002	.055*	-.023	.082**	-.101**	-.106**	.024	-.082**	

Notes. ** Significance codes 0.01 ; * Significance codes 0.05. Explanatory Variables for Capital Structure Theories:

-AGE as a proxy for POT.

-EMPL, SALES, A_STRUC, and CUR_LIQ as proxies for both TOT and POT.

-AUR and DER as proxies for AT.

4. Method and Results

4.1 Regression Models and Hypotheses Check

We consider six regression models to consider pre-crisis and crisis periods and the leverage decompositions. In models 1 and 2 the dependent variable is TDL, in the models 3 and 4 the dependent variable is STL, and finally in models 5 and 6, we consider LTL. The ordinary least squares method (OLS) is used to estimate the unknown parameters of the linear regression models using the R statistical software. The model takes the form:

$$\ln Y = B_0 + B_1 \ln AGE + B_2 \ln EMPL + B_3 \ln A_STURC + B_4 \ln SALES + B_5 \ln CUR_LIQ + B_6 \ln AUR + B_7 \ln DER + u$$

We stress that models 5 and 6 show a very low relevance. Indeed, the coefficients of the LTL models are not statistically significant, except for few values during the crisis. In addition, the R-squared is very low, and thus the variables explaining STL and TDL do not explain at all the LTL. The residual plots (not inserted in this article) of the LTL models show the presence of two distinct groups, due to the presence of a considerable number of firms that do not use the long-term debt; in effect, we observed that the percentage of companies using consistently the long-term debt is very low. Even considering only these companies, it was not possible to identify predictors explaining the long-term debt. For these reasons, we discard models 5 and 6 (omitted) and concentrate only on models 1 and 2 (see Table IV) and models 3 and 4 (see Table V).

Our results suggest that AGE has a negative effect on family firms leverage both pre-crisis and during the crisis. This finding holds for both TDL and STL (see Tables IV and V) confirming hypotheses H1a and H1b.

Regarding the relationship between SIZE and leverage (see hypotheses H2a and H2b), our results suggest that, when SIZE is measured by EMPL, it has a negative effect on leverage, both before and during the crisis, confirming hypotheses H2a and H2b (both for TDL and STL). Contrary, if SIZE is expressed by SALES, it has a positive impact on leverage; however, it not statistically significant on STL in pre-crisis period (see Table V). In the latter circumstance, we underline that hypotheses H2a and H2b should be rejected.

Because PROFIT is not statistically significant in explaining family firms' leverage, we have not considered it in our models as explained in Section 2.2. Thus, there is enough evidence, for rejecting both hypotheses H3a and H3b.

Tables IV and V highlight that A_STURC has always a significant negative effect on leverage. Therefore, hypothesis H4a should be rejected because it suggests the existence of a positive relationship. Contrary, hypothesis H4b confirms that tangible assets negatively influence family firms' leverage during the crisis.

Our findings show that CUR_LIQ has always a negative effect on family firms leverage both pre-crisis and during the crisis. This confirms that, for both TDL and STL, current liquidity reduces the need to resort to debt confirming hypotheses H5a and H5b.

We observe that the two types of agency costs have opposite effects. Specifically, AUR has always a positive effect on leverage, and thus, because it is inversely proportional to agency costs, we can state that, if agency costs are expressed by AUR, hypothesis H6a is rejected and hypothesis H6b may be accepted. However, focusing our attention on DER, we observe different results. Indeed, Tables IV and V underline that DER has always a positive effect on leverage except for the STL model during the crisis. Therefore, we can accept hypothesis H6a and reject hypothesis H6b. Hence, the two proxies for agency costs for STL give conflicting results in the pre-crisis period, and thus we need to refer to their percentage contribution (see Section 3.2). This further analysis will be added to understand which the strongest effect between these two indicators is.

Table IV. Regression models for TDL pre-crisis and during the crisis

MODEL N°1 - TOTAL LEVERAGE PRE-CRISIS				
VARIABLES	COEFF.	STD. ERROR	P-VALUE	VIF
CONSTANT	-0.751	.106	.000***	
<i>Explanatory Variables for POT</i>				
AGE	-0.050	.009	.000***	1.059
<i>Explanatory Variables for POT and TOT</i>				
EMPL	-0.054	.009	.000***	1.180
CUR_LIQ	-.541	.014	.000***	1.198
SALES	.056	.011	.000***	1.110
A_STURC	-.048	.007	.000***	1.142
<i>Explanatory Variables for AT</i>				
AUR	.116	.017	.000***	1.213
DER	.534	.108	.000***	1.139
<i>Res. SE:0.1948 on 1494 DF - R²:0.6078. Adj. R²:0.6059 - F-stat.:330.7 on 7 and 1494 DF. p-val.:< 2.2e-16</i>				
MODEL N°2 - TOTAL LEVERAGE DURING THE CRISIS				
VARIABLES	COEFF.	STD. ERROR	P-VALUE	VIF
CONSTANT	-1.218	.125	.000***	
<i>Explanatory Variables for POT</i>				
AGE	-0.046	.011	.000***	1.064
<i>Explanatory Variables for POT and TOT</i>				
EMPL	-0.041	.010	.000***	1.154
CUR_LIQ	-.623	.014	.000***	1.085
SALES	.075	.013	.000***	1.104
A_STURC	-.102	.008	.000***	1.222
<i>Explanatory Variables for AT</i>				
AUR	.169	.018	.000***	1.360
DER	.125	.061	.040.	1.032
<i>Res. SE:0.2019 on 1494 DF - R²:0.5787. Adj. R²:0.5768 - F-stat.: 293.2 on 7 and 1494 DF. p-val.: < 2.2e-16</i>				

Notes. Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' .

The log-log model is particularly suitable to interpret variables that are expressed as a percentage. The regression coefficients indicate the elasticity of the dependent variable with respect to the independent variable that is, the percentage change of leverage associated with a variation of a percentage point of the regressor.

Table V. Regression models for STL pre-crisis and during the crisis

MODEL N°3 - SHORT TERM LEVERAGE PRE-CRISIS				
VARIABLES	COEFF.	STD. ERROR	P-VALUE	VIF
CONSTANT	-.824	.099	.000***	
<i>Explanatory Variables for POT</i>				
AGE	-.023	.008	.006**	1.059
<i>Explanatory Variables for POT and TOT</i>				
EMPL	-.042	.008	.000***	1.180
CUR_LIQ	-.592	.013	.000***	1.198
SALES	.014	.010	.168	1.110
A_STURC	-.119	.006	.000***	1.142
<i>Explanatory Variables for AT</i>				
AUR	.297	.015	.000***	1.213
DER	.352	.100	.000***	1.139
<i>Res. SE: 0.1806 on 1494 DF - R²:0.7021. Adj. R²:0.7007 - F-stat.: 502.9 on 7 and 1494 DF. p-val.: < 2.2e-16</i>				
MODEL N°4 - SHORT TERM LEVERAGE DURING THE CRISIS				
VARIABLES	COEFF.	STD. ERROR	P-VALUE	VIF
CONSTANT	-1.33	.114	.000***	
<i>Explanatory Variables for POT</i>				
AGE	-.034	.010	.001***	1.064
<i>Explanatory Variables for POT and TOT</i>				
EMPL	-.043	.009	.000***	1.154
CUR_LIQ	-.657	.012	.000***	1.085
SALES	.050	.012	.000***	1.104
A_STURC	-.167	.008	.000***	1.222
<i>Explanatory Variables for AT</i>				
AUR	.369	.016	.000***	1.360
DER	-.104	.055	.045.	1.032
<i>Res. SE:0.2145 on 1494 DF - R²:0.7382. Adj. R²:0.737 - F-stat.: 601.8 on 7 and 1494 DF. p-val.: < 2.2e-16</i>				

Notes. Significance codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' .

4.2 The Effect Dimension

Our results suggest that the capital structure determinants, in the medium Italian family firms, have different degrees of influence on leverage before and during the crisis. Moreover, some predictors such agency costs are composed by different proxies providing conflicting results. For these reasons, we introduce the "dimension of the effect" of each variable (Chiorri, 2010) that is the percentage contribution in influencing the dependent variable (Courville and Thompson, 2001): $f_i^2 = (R^2 - R_{k-1}^2) / (1 - R^2)$, where f_i^2 is the dimension of the effect of the i -th variable in explaining the dependent variable, and R_{k-1}^2 is the R-squared of the model computed without the variable i -th. Because variables are not expressed in the same units, we refer to standardized coefficients. Table VI shows the percentage contribution of each variable in explaining leverage for both periods.

Table VI. Percentage contribution in influencing TDL and STL pre-crisis and during the crisis periods

	TDL		Difference between regression coefficients		STL		Difference between regression coefficients	
	pre-crisis	crisis	T	P-value	pre-crisis	crisis	T	P-value
<i>Exp. for POT</i>								
AGE	2.85%	2.07%	0.28	0.77	1.01%	1.30%	0.85	0.39
<i>Exp. for POT and TOT</i>								
EMPL	3.26%	1.59%	0.96	0.33	2.65%	1.99%	0.08	0.93
CUR_LIQ	83.73%	83.06%	4.14	0.00**	69.98%	61.65%	3.67	0.00**
SALES	1.83%	2.49%	1.11	0.26	0.36%	1.50%	2.30	0.02**
A_STURC	1.13%	5.09%	5.07	0.00**	9.73%	14.29%	4.80	0.00**
<i>Exp. for AT</i>								
AUR	2.92%	5.30%	2.14	0.03**	14.32%	19.28%	3.28	0.00**
DER	4.28%	0.39%	3.29	0.00**	1.95%	0.00%	3.99	0.00**

Notes. ** Significance codes 0.01; * Significance codes 0.05.

CUR_LIQ is the main variable in explaining both the TDL and STL. Indeed, the percentage contribution is about 83%, in explaining the TDL, both before and during the crisis whereas, in explaining STL, it is 70% before the crisis and 62% during the crisis. Maybe, this decrease is partially due to the increase of the percentage contribution of other variables (A_STURC and AUR), thus, it is a decrease in relative terms (only in percentage and not in absolute value). A_STURC and AUR offer very high contributions in explaining both TDL and STL, especially during the crisis. DER gives a significant contribution before the crisis, but, during the crisis, it decreases. Finally, EMPL, AGE, and SALES give weak contributions in influencing the leverage.

To judge whether these changes are significant, we made a hypothesis test to compare the differences between the regression coefficients. We compared the two TDL models and, separately, the two STL models, before and during the crisis. Table VI shows the T statistics and the P-values of the tests. These differences between the two periods are statistically significant for both TDL and STL, except for AGE and EMPL (never significant), and SALES (not significant for TDL). This analysis confirms that the effect of CUR_LIQ, A_STURC, AUR, DER, for both TDL and STL, vary significantly from the pre-crisis to the crisis period.

To better understand hypotheses H6a and H6b (regarding agency costs effects), we also refer to their percentage contribution (Table VI) for depicting which proxy exerts the strongest influence on leverage. Specifically, for TDL before the crisis, we observe that the percentage effect of AUR is 2.92% (negative influence on TDL), while the percentage contribution of DER is 4.28% (positive effect on TDL). Thus, we can state that hypothesis H6a, for TDL, is supported because the entire effect of agency costs on total leverage is positive. In contrast, for STL before the crisis, the hypothesis H6a is rejected because the total effect is negative (AUR is 14.32% and DER 1.95%). Regarding the effect during the crisis, we highlight that, for TDL, the effect of AUR is stronger than that of DER, and thus hypothesis H6b is confirmed. Also, for STL, hypothesis H6b is confirmed because AUR and DER underline a negative effect on leverage; in effect, AUR percentage contribution is 19.28% whereas DER percentage contribution is almost null (see Table VI).

4.3 Robustness Testing

Because TDL is strongly distorted by the long-term component, we provide the robustness test concentrating only on STL. We computed the Shapiro-Wilk normality test for the two periods: for the model 3, the index is equal to 0.989 (p-value = 1.217e-09) whereas, for the model 4, we get a value equal to 0.993 (p-value = 2.575e-06). Both are very close to one, with p-values close to zero, thus we accept the null hypothesis that the residuals are normally distributed.

Two different tests are implemented to check for heteroskedasticity: the Park test (Park, 1966) and a simplified version of the White test (White, 1980). For the first, each variable present p-values greater than 0.45, thus we can accept the null hypothesis of homoskedasticity. The second test involves the inclusion of all possible interactions between the variables taken in pairs; for both the models we obtain p-values greater than 0.3. Thus, we can state that heteroskedasticity is not an issue of models 3 and 4.

Furthermore, to partially mitigate the possible drawbacks of endogeneity, the independent variables are considered in previous periods with respect to the dependent variables.

5. Discussion and Conclusion

In this paper, we examine whether and how the determinants of capital structure have a different impact on family firms' leverage before and during the crisis. The main element that distinguishes our study from previous researches on family firms' capital structure is that we extend the analysis to the crisis context. Indeed, previous studies focused on non-crisis contexts, then differently from the non-family firms field, we still little now about the financial behavior of family firms during the crisis. Second, this research contributes to have a more fine-grained understanding on the debt-equity choice of family firms. Moreover, our study focused only on unlisted medium sized family firms allowing us to have a more accurate picture on capital structure decisions of these firms. The literature suggests that unlisted and medium firms may be very different from listed companies in terms of their access to capital market (Crespi & Martin-Oliver, 2015) and from small firms regarding their preferences, risk aversions, bankruptcy, and abilities to access the debt (Chittenden et al., 1996; Cressy & Olofsson, 1997; Köksal & Orman, 2015). Instead, previous studies have considered only small-sized family firms (e.g. López-Gracia et al., 2007) or only medium family firms but in non-crisis contexts (e.g. Gottardo & Moisello, 2014), or family firms without differences in size or between listed and unlisted firms.

Table VII summarizes which hypotheses are accepted or not. Our results, in a perspective of comparison between the POT and TOT, reveal that the POT provides a more correct prediction than the TOT in explaining the capital structure of Italian medium-sized family firms. In particular, this is confirmed for the signs of determinants such as tangible assets, current liquidity, and size (expressed as number of employee). In particular, our results suggest that the short-term debt is negatively influenced by tangible assets (both before and during the crisis), highlighting that family firms use the short-term debt to finance non-fixed assets and use collateral to attract long-term debt. Moreover, this result reveals low information asymmetry and low agency costs between medium family firms and lenders during the crisis, confirming that family firms have low difficulties to obtain external debt finance during the crisis (Crespi & Martin-Oliver, 2015). Moreover, our finding is consistent with many studies suggesting negative effects of STL and positive of LTL (Michaelas et al., 1999; Sogorb-Mira, 2005; Van der Wijst, N. & Thurik, R., 1993). About current liquidity, our results show that this is the main variable in explaining both short-term debt and total debt. Specifically, it shows that the leverage is negatively affected by current liquidity, rejecting the TOT predictions and confirming the argumentations of the POT, which assumes that firms with high liquidity tend to borrow less (Deesomsak et al., 2004), and previous empirical studies (e.g. Danso & Adomako, 2014; Gottardo & Moisello, 2014). Also for firm size (measured by the number of employees), our results show a negative effect on short-term leverage and a positive effect on total debt as empirically demonstrated by several previous studies (e.g. Hall et al., 2004; Micheales, 1999; Sogorb-Mira, 2005). On the contrary, if firm size is measured by sales, its effect on the short-term leverage is positive during the crisis whereas before the crisis it is not significant. Effectively, an increase of sales may probably generate an increase of illiquidity in a context of crisis because small and medium firms generally exert a minor pressure in collecting payments from customers, and late payments are often financed by trade credit, which is the first preference for the POT (Degryse et al., 2012). These findings confirm the conclusions of previous studies on family firms' financial behaviors which have highlighted that the picking order framework appears to fit better with family firms' financial decisions (Crocì et al., 2011; Gonzalez et al., 2013; Mahéroul, 2004; Romano et al., 2000; Poutziouris, 2001; Wu et al., 2007).

However, the POT does not match all of the observed capital structure determinants. In particular, the POT does not generate prediction for one of the main determinant of its theoretical argumentations that is profitability. Instead, it is not significant neither before the crisis nor during. This is an unexpected result, as profitability is one of the main variables used by existing research to explain the preference of family firms for internal resources and for their behavior closer to the POT. This result may suggest that, even if family firms have a strong preference for internal funds in their investment decisions, when they decide to use debt, lenders evaluate other factors such as size, age, their reputation or their long-term orientation, and their intention to maintain control across generations. For example, Crespi & Martín-Oliver (2015) have shown that during the crisis, lenders are less reluctant to lend money to family firms due to their long-term perspective and their control across generations.

Our research also highlights the relevance of agency costs in explaining family firms' capital structure. The presence of opportunistic behaviors of management, during the crisis period, is emphasized by the AUR decrease. In effect, this reduction does not seem to be caused by SALES (that is a component of AUR ratio), because the latter decreases 2.8%, while AUR decreases 12.69%. Our findings also underline that AUR has a positive effect on STL, and this is consistent with the risk-efficiency hypothesis (Margaritis et al., 2010); indeed, it states that efficient firms have lower risks of bankruptcy and financial distresses, and thus they choose a higher leverage

ratio. This implies that during the crisis, when a family firm has low efficiency (high agency costs), it does not choose the debt to discipline management opportunistic behaviors. This result seems to suggest that the main important objective that drives family firms' capital structure choices is to safeguard the control on the business and the operational autonomy. This finding also contributes to better understand the contingency that can influence the dynamic of agency conflicts in family firms highlighting how the context of crisis change the dynamic of agency conflicts.

Table VII. Hypotheses regarding the impact of firm factors on total leverage ratio in pre-crisis and crisis period

Firm's Factor	Hypotheses for pre-crisis period	Results in pre-crisis period	Hypotheses for crisis period	Results in crisis period
Age	(H1a) -	-	(H1b) -	-
Size	(H2a) -	-	(H2b) -	-
Profitability	(H3a) -	Not significant	(H3b) -	Not significant
Asset Structure	(H4a) +	-	(H4b) -	-
Current Liquidity	(H5a) -	-	(H5b) -	-
Agency Costs	(H6a) +	+	(H6b) -	-

Our overall results emphasize that no theory alone is able to fully explain the leverage of medium family firms, but a more exhaustive understanding of their capital structure may be achieved through the combined use of different theories. Moreover, about the debt choice, our study reveals that family firms follow an order of preference between short-term and long-term debts as assumed by the POT; however, during the crisis, their short-term debt decreases whereas the long-term debt tends to increase.

Our results have implications for managers and practitioner. Indeed, this research suggests adapting the general theory on capital structure to the specific characteristics of medium family firms. In particular, making advice to family firms, they should consider that medium family firms' financial behaviour is more suitable with the predictions of the POT, but profitability is not the key factor driving decisions between equity and debt. Hence, current liquidity and asset structure appear to be the most important variables explaining capital structure of medium family firms, both in crisis and pre-crisis period. These aspects assume particular importance with reference to the Italian context during the crisis in 2008-2009. In fact, during the crisis, there has been an increase of demand for credit to finance companies' working capital with a consequent contraction of the credit supply by banks and an increase in the cost of capital (Banca d'Italia, 2012). Managers should therefore carefully consider that, in crisis situations, the use of short-term debt may lead companies to tensions of liquidity and excessive financial charges. This condition can expose companies to an excessive risk, especially if it is combined with a decline in turnover as may occur during a crisis. Hence, during a crisis, managers should identify all possible alternatives for financing and accessing to credit, even if different from bank credit.

Moreover, considering the relevance of small and medium firms in the Italian economic context, our study also has implications for policy makers. In effect, our results show three important aspects that can be useful for financial policies for supporting medium family firms: a) medium family firm's financial behavior does not significantly change between from pre-crisis to crisis period; b) the logic that appears to guide family firm's financial decisions is to maintain the family control over the business and reduce risk; and c) medium family firms have a strong preference for short-debt that is supported by their current liquidity.

Nevertheless, our paper is not without limits requiring further investigations. First, our results are not generalizable because our investigation only considers Italian medium family firms. Future studies should consider international comparison in order to analyze whether country-related aspects may affect these findings (Antoniou et al., 2008) also during the crisis. Second, we have compared the pre-crisis and crisis period, but a more complete understanding of the financial behavior of a firm may be achieved comparing the capital structure before, during, and after the crisis. Second, we remark that the determinants of the long-term debt still remain unclear for Italian medium family firm. Probably, these are related to the specific nature and essence of family firms, and then its determinants may be linked to behavioral aspect that future research should investigate.

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A Revolutionizing Supply-Chain Management

Donia Damak¹

¹Business Management Department, Donghua University, Shanghai, China

Correspondence: Donia Damak, Business Management Department, Donghua University, Shanghai, China.

E-mail: damak.donia@yahoo.fr

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Abstract

Electronic commerce (EC) is possibly the most promising application of information technology witnessed in recent years. It is revolutionizing supply-chain management and has enormous potential for manufacturing, retail and service operations. E-commerce markets are growing at noticeable rates. The online market is expected to grow by 56% in 2015–2020. This paper shows the importance of E-commerce and define it and examines its major elements that link organizational systems. The application of EC in manufacturing, retailing and service operations is examined, and a framework for describing EC components and their role in different areas of an organization is proposed. The first part of the paper discusses challenges and new trends in supply chain business intelligence and provides background research of big data initiatives related to EC. The rest of this paper is from a discussion of the e-commerce impact on supply chain management and the advantages of supply chain management of e-commerce platform. The trend of e-commerce platform is proposed based on the development supply chain management. What will be the effect of the Internet on supply chain? What is the relationship between e-commerce and supply chain management?

Keywords: e-commerce, implications, operations management, SCM

1. Introduction

Electronic commerce (EC) is a popular topic in the mass media and in informatics circles as well.

Perhaps its impact is most visible in the areas of financial services and retailing. Many EC initiatives have risen in a short period of time. Those initiatives include innovative smart cards to facilitate EC, remote payments and electronic checking online trading of stocks, bonds and related financial instruments, online banking, and online retailing (e-tailing). We are now becoming comfortable with the Internet, and we are beginning to appreciate its ability to provide a wealth of diverse information from around the globe; literally millions of sites are just a click away, opening up new opportunities for trade and information exchange.

Internet use is no longer a novelty; it is becoming as much a part of our daily lives as television and telephony. We have witnessed a true revolution with the growth of the Internet and Internet use, but now we are experiencing a second Internet revolution and it is called electronic commerce. The tools and techniques to enable trading over the Internet are becoming mature, and EC is growing very rapidly. (Asokan, Janson, Steiner, Waidner, 2002).

One can see evidence of EC everywhere on the World Wide Web (WWW). Many commercial web sites have catalogues and support online transactions, but EC is much more than these. It includes everything from sourcing to settlement and all the processes that underlie trading. The Internet's WWW has become the primary driver of contemporary EC.

Although the emphasis has moved from electronic data interchange (EDI) to the Internet, the focus is still on the technology required to exchange information rather than supporting inter- and intra-organizational business processes. EC is not just about facilitating individual business transactions, it also involves the management of the relationships that lead to and arise from transactions.

EC is the process of conducting business electronically among various entities in order to satisfy an organizational or individual objective. A key ingredient of EC, sometimes referred to as electronic trading, is the advertisement and procurement of goods and services over the Internet. The success and volume of EC on the web has been widely reported. With success in establishing an environment, in which EC can grow and flourish,

every computer can become a window open to every business, large and small, around the globe.

The electronic medium we call the Internet has the potential to reduce actual transaction time and processing time dramatically, while at the same time making information available globally. Internet-based EC has been embraced as a means of reducing operational cost and as a high potential means of generating revenue. The ubiquity of the web and the availability of browsers across different platforms provide a common base upon which EC applications can be built, especially in the enterprise.

This common platform has reduced the significance of issues pertaining to software distribution and software installation, thus encouraging the expansion of EC via Intranets, Extranets and the Internet.

EC provides new channels for the global marketing of tangible goods and presents opportunities to create new businesses providing information and other knowledge-based intangible products. Although most EC is currently at the inter-corporate and inter-organizational level, services targeted at individual customers are evolving rapidly. The Internet is the most obvious example of this and is a major catalyst in the diffusion of EC, helping to foster a common environment for electronic transactions of all kinds (Morphett, 2001). EC encompasses all forms of interactive business transactions, which are facilitated by networks of computers.

EC is expanding because of the greater number of businesses and individuals who are able to use these networks and the growing number of ways in which businesses can conduct transactions electronically with other organizations and directly with consumers.

At present, business-to-business, EC seems still to be of greater volume than business-to-consumer EC, but this may change in the future. These trends are important to the global economy and to the economy of individual countries because EC contributes to economic efficiency.

EC contributes to economic efficiency in five important ways. They are as follows: (a) shrinking distances and timescale, (b) lowering distribution and transaction costs, (c) speeding product development, (d) providing more information to buyers and sellers and (e) enlarging customer choice and supplier reach (Levis, 2006).

The organization of this paper is as follows:

Section 2 presents the details and major elements of EC. Section 3 examines the application of EC in different areas of manufacturing, retailing, and service organizations. A framework describing the impact of EC on operations is proposed in Section 4. Finally, Section 5 presents a summary of findings and conclusions.

2. Definition of and Major Elements of E-commerce

EC is an emerging area that encompasses processes directly and indirectly related to the buying, selling and trading of products, services and information via computer networks – including the Internet. (Kalakota and Whinston, 2007) define EC from these four perspectives:

(a) Communication perspective – EC is the deliverer of information, products/services or payments over telephone lines, computer networks or any other electronic means, (b) business process perspective – EC is the application of technology towards the automation of business transactions and work flows, (c) service perspective – EC is a tool that addresses the desire of firms, consumers and management to cut service costs while improving the quality of goods and increasing the speed of service delivery and (d) online perspective – EC provides the capacity to buy and sell products and information as well as other online services.

It is obvious that EC can be described in many ways. Perhaps the most useful description of EC would link it to trading: EC is trading by means of new communications technology. It includes all aspects of trading; including commercial market creation, ordering, supply chain management and the transfer of money. EC is actually a generic title that describes a range of technologies and practices that are now available to improve the effectiveness of trading relationships. At the application level, typical technologies would include: telephone, fax, EDI, electronic mail, electronic funds transfer, and the Internet – more specifically the Web. (Wakid, Barkley, Skall, 2010)

2.1 Electronic Mail (E-Mail)

E-mail is the exchange of computer-created and computer stored messages via a telecommunication network. E-mail was one of the first uses of the Internet and is still the most popular Internet use – a large percentage of Internet traffic is e-mail. E-mail can also be exchanged between online service users in private or public networks besides the Internet. The term e-mail is used almost interchangeably with messaging, however, it really represents only one aspect of messaging –interpersonal messaging (IPM), which is the exchange of text messages and attachments among individuals. E-mail is well established as a fast, flexible and cost-effective means of communication. It is simple to use. One need only complete a few steps to send, reply, and forward a

message to one or many recipients, regardless of the geographic location. E-mail is linked to an electronic postal system wherein an addressed envelope accompanies each message sent to a mailbox.

From there, the message is dispatched to a delivery network, through which it is conveyed via the message transfer service until it arrives at the recipient's mailbox. Recipients then access their mailboxes and open their mail at a time that is convenient to them.

E-mail is a cheap and convenient way for people to communicate. As people spend more and more time away from a desk, it can be an easy and efficient way of exchanging information.

This can increase a person's productivity up to a point, beyond which e-mail volume can be so great that it inhibits productivity rather than enhancing it.

Under such conditions, groupware becomes a viable option to facilitate electronic interaction among groups of people who must communicate to accomplish group tasks. The greater control groupware can provide for the nature of participant communications and can encourage greater work related communications. Groupware products can be Internet based – NetMeeting is a good example of such a product.

2.2 Electronic Data Interchange (EDI)

Transacting regular business via e-mail has its limitations. Beyond a certain traffic volume, EDI becomes a preferred alternative. EDI is computer-to-computer exchange of business documents without human intervention. EDI can handle high volume transactional traffic between companies.

Formal document and transmission standards inherent in EDI, combined with adequate bandwidth, permit large transaction volumes. EDI enables enterprises to exchange precisely formatted business orders, payments, or even engineering drawings, electronically via a direct communication link, with no human intervention.

The major benefit of this technology is realized when EDI is integrated into a company's EC system. According to (Mohsen, 2007), EDI will help to reduce inventories, foster JIT management, promote engineering interchange, and improve work scheduling. Companies that have successfully implemented EDI have reported general benefits of expedited purchasing processes, reduced transaction cycle times, higher inventory turnovers, faster response times and overall improved service (Sohal, 2012) states that EDI provides quick order responses from suppliers and automatic ordering from customers.

2.3 Internet and Electronic Commerce

The open standards of the Internet ensure that large organizations can easily extend their trading communities, by increasing the efficiency of their business operations. In addition, smaller companies Found the proprietary communication technologies of the last decade too complex and costly, can now select the level of communication appropriate for their businesses and benefit from the Internet revolution and the EC revolution. Organizations new to EC will find the open standards provided by Internet technologies easy to implement, quick to learn, and fast and efficient to use. The capabilities and opportunities afforded by an Internet-based electronic marketplace will significantly improve the productivity and competitiveness of participating companies, whether they are suppliers or customers.

The Internet houses an on-line global marketplace that operates 24 hours a day, with millions of sellers, buyers, products and services. The Internet and its capabilities also provide companies with new, more cost effective and time-efficient means for working with customers, suppliers and development partners. Internet-based EC will enable companies to:

- Shorten procurement cycles through the use of on-line catalogues, ordering, and payment;
- Cut costs on both stock and manufactured parts through competitive bidding;
- Reduce development cycles and accelerate time- to-market through collaborative engineering, product, and process design, regardless of the location of participants;
- Gain access to worldwide markets at a fraction of traditional costs;
- Ensure that the product, marketing information, and prices are always up to date;
- Significantly increase the speed of communication, especially international communication;
- Drastically reduce purchasing and production cycles;
- Reduce the cost of communications directly (E-mail and EDI save on postage) and speed up communication can reduce inventory and related inventory and purchasing costs;

- Promote closer relationship with customers and suppliers, e.g. web sites enable companies to maintain customers and suppliers apprised of developments that concern them and practice effective relationship marketing;
- Provide a quick and easy way of exchanging information about a company and its products, internally and externally e.g. WWW sites, Intranets, and extranets;
- Take advantage of alternative sales channels and tap new markets or markets niches.

The Internet and WWW offer the opportunity to expand EC activity in the contract cycle to enable new suppliers to service new customers electronically, even to the point of negotiating new contracts. The WWW enables business-to-business and business-to-consumer transactions. Tim Berners-Lee created the web protocols in 1990 that were introduced onto the Internet in 1991 using Nicola Pellow's line-model browser and the existing hypertext mark-up language (HTML) (Aaron, Decina, Skillen 2012).

When combined with Mosaic in 1993, the web protocols brought us the world wide web (WWW of just the Web). The Internet, or more specifically the Web, is a key ingredient in EC, as we know it today. Among other things, the web provides a common platform for home pages and hence electronic storefronts, malls, auctions and more.

The success of the Internet and the popularity of the Web's user friendly, graphical user interface led to the development of Intranets (intra-organizational systems) and Extranets (inter-organizational systems). Intranets and Extranets rely on Internet protocols and Web interfaces.

These developments, along with the Internet, contributed to the growth of global procurement of goods and services. Probably more important is that the Internet-like technology infrastructures facilitated internal and external dissemination of company information and allowed firms to better manage customer relationships. Cisco Systems, with EC sales of over \$28 million per day, has been very successful in using Intranets and Extranets in support of its business processes. Cisco started with EDI, but migrated to a very sophisticated and highly effective customer management system.

3. Application of E-Commerce in Operations (Manufacturing and Services)

EC is changing manufacturing systems from mass production to demand-driven, possibly customized, just-in-time manufacturing systems.

Companies like IBM, General Motors, General Electric and Boeing are assembling products for which the components are manufactured in many locations. Sub-assemblers gather materials and parts from their vendors and they may use one or more tiers of manufacturers. Communication, collaboration and coordination become critical in such multitier systems. Using electronic bidding, assemblers get sub-assemblies 15–20 percent cheaper than before, and up to 80 percent faster.

These systems are flexible and adaptable, allowing fast changes with minimum cost. Costly inventories, once inherent in mass production systems, can be minimized (Turban, Lee, King, Chung, 2012)

Companies in the service sector, such as banks and stock brokerage houses, were online even before the Internet – the digitization of their business processes made this possible. In the early years of digitization in the financial industry, businesses such as banks provided clients with software on disc. The software that the users installed in their computers provided them with access to the vendor's database over private lines, and later over the Internet. Over time, companies started allowing customers to download the software instead of supplying it to them on disc.

Today, there is no need for the software since Internet browsers allow users to conduct business transactions with these service operations. Similarly, travel and real estate agents extracted information from information systems installed in their offices. They delivered information to the customers by mail and courier, or customers had to visit the agency office to get information and documentation of service transactions. For real estate businesses, customers visited the office to view a video clip or to see photos of real estate for sale. Today, many of the services of travel and real estate companies are available anywhere and anytime over the Internet. EC, largely through the Internet, provides customers with direct access to services. As a consequence, most of the value added tasks of agents and brokers can be automated. As more and more people accept EC as an alternative to more traditional labor intensive processes that have for years supported these types of service businesses, there will be less need for human representatives to directly provide the service and greater need for technical personnel to create and maintain the technical systems that support the services. The attention now is to how EC supports functional activities in organizations.

3.1 Marketing

A market is a network of interactions and relationships where information, products, services and payments are exchanged. When the marketplace is electronic, the business center is no a physical building but rather a network that facilitates and supports business interactions and transactions. The electronic market brings buyers and sellers together, but not necessarily in the same place and not necessarily at the same point in time. The market handles all the necessary transactions to facilitate exchange, including the exchange of funds (with or without the involvement of banks). The advent of EC is changing marketing practice. In particular, the transformation of traditional intermediaries such as retailers occurs as a result of new computer-mediated relationships. One need only examine the setting of an interactive home-shopping supermarket to appreciate the changing role of the retailer in EC (Davis, Buchanan, Brodie, 2012). EC systems for business-to-business commerce on the Internet are still in their infancy.

Internet electronic markets for business-to-business EC, follow the n-suppliers while m-customers scenario is slowly evolving. Comprehensive Internet EC systems should provide sure and easy access, be easy to use, help overcome differences in time of business, location, and language between suppliers and customers, and at the same time support the entire trading process in business-to-business commerce. (Block and Segev, 2012) suggest the following EC impacts on marketing:

- Product promotion: EC enhances the promotion of products and services through direct, information-rich and interactive contact with customers.
- New sales channels: EC creates a new distribution channel for existing products, owing to its direct support of research on customers and the bidirectional nature of communication.
- Direct savings: The cost of delivering information to customers over the Internet results in substantial savings to senders (when compared with non-electronic delivery or delivery via VAN systems). Major savings are also realized in the direct delivery of digitized products (such as music and software) as compared to the costs of traditional delivery.
- Reduced cycle time: The delivery time for digitized products and services can be reduced to seconds. Also, the administrative work related to physical delivery, especially across international borders, can be reduced significantly, reducing the cycle time by more than 90 percent.
- Customer service: Customer service can be greatly enhanced by enabling customers to find detailed information online. (For example, FedEx allows customers to trace the status of their packages.) Also, intelligent agents can answer standard e-mail questions in seconds.

Finally, human expert services can be expedited using help-desk software. EC supports marketing intelligence. Intelligence systems aid in acquiring information to evaluate alternatives and to assist in making choices (choice is selection from among the alternatives). EC directly supports the following three intelligence activities: (a) search for products, (b) management of search criteria, and (c) comparison of products found.

- (a) Search for products: Once one feels/recognizes a need, one develops a set of more or less specific criteria for a desired product. One can then search for products that meet the criteria. In using the Internet for one's search, one might use hyperlinks, 3D navigation, a search engine or any other navigational technology to assist one in one's search. During this search one may decide to switch to criteria management or comparison activity. Such a switch might be promoted by on-screen information (e.g. an advertisement for a related product) or as the result of an internal decision (e.g. due to an impasse in the search for a particular product).
- (b) Management of search criteria: Criteria management occurs when one encounters information that prompts one to alter one's search criteria. The alteration may be a slight refinement of the current criteria or the specification of completely new search criteria. Criteria may become more specific due to acquired information (i.e. in examining laptop computers and discovering great variation in weights, one might decide that the weight is an important consideration in the decision and set a specific target for the laptop weight). At times, an entirely new set of criteria will be generated, e.g. when a user encounters a product that fulfils other needs in addition to meeting current purchasing goals. This activity may occur before the search for products, as when the Web is used to gather information to supplement one's knowledge of the product one intends to purchase. In most cases, the search and specification of what is to be searched for will be the interleaved (but defined) activities. The decision to switch from a search goal to a criteria management goal will often be prompted by the

display. Examples of prompts include advertisement, buttons offering product reviews, links to other information sources and the exposure to other products.

- (c) Comparison of products: As users identify potential purchases, they need to compare them with each other, e.g. to find the cheapest, or perhaps the lightest. Often comparison will require simultaneous and relative assessment of products on a number of criteria. This stage corresponds to the Guttman, 2012 stages of product and merchant brokering.

3.2 Purchasing

Automated purchasing and logistics are carried out between trading partners with well-established relationships – this is a primary application of EDI. Intelligence and valuable information are normally concentrated on the computer systems of the participants rather than the EDI channel between them. The purchase and direct selling offers the prospect of large-scale disintermediation eliminating middlemen from supply chains. Some traditional intermediary roles will become threatened as businesses and individuals reevaluate their trading patterns in response to new EC opportunities; however, far from eliminating the need for intermediaries, the Internet is currently generating a wide range of new opportunities in the facilitation and mediation of electronic trading environments. On-line purchasing environments are still very much in their infancy, and over the next few years, one may expect to see a rapid increase in the functionality of these environments that will assist both buyers and sellers. Intelligent purchasing advisors will assist buyers in specifying their product requirements, searching for product information, and selecting the best supplier. This might lead to a shift in the balance of power from sellers to buyers.

Delivery of a product can signal the termination of the negotiation stage or occur sometime afterwards (in either order). In some cases, the available payment options or delivery options may influence product and merchant brokering.

3.3 Design

High quality design of products has been successfully achieved with the help of quality function deployment (QFD), design for manufacturing and design for quality. Also, various computer-based technologies have helped to improve the quality of product designs. These include computer-aided design (CAD), 3D Modeling and ProEngineer to reduce the time to develop new products. Since companies have been forced to compete based on flexibility and responsiveness in a global market, there is a need to reduce the product development cycle time – it accounts for a major portion of the total lead-time to deliver the product after receiving orders from customers.

Concurrent engineering (CE) has been employed to improve the communication between design and other functional areas by using cross-functional, multi-disciplinary teams for new product development. CE requires input from customers as well as from within the organization. The Internet can power methods such as QFD, and web-based data collection and mining, to help improve the quality of design and to enhance competitiveness in global markets. Design engineers located in different parts of the country or world can exchange information using the Internet and WWW.

This can reduce design time and improve the accuracy of the information on product design, and at the same time help to design products that will capture good market share. Companies are using an approach for marketing that uses continuously refined information about current and potential customers to anticipate and respond to their needs.

This is the practice of customer relationship management (CRM). CRM software (run by Internet) can be utilized to conduct research on customer requirements to facilitate better product design.

3.4 Production

For organizations to stay in synchronization with the changes taking place in their operational and competitive environments, the use of fast, accurate information systems is crucial.

The implementation of e-manufacturing or e-service necessitates business-to-business (B2B) e-commerce. There are numerous Internet enabled supply chain management systems and enterprise resource planning (ERP) systems available today including MRP, SAP, BAAN, Oracle, and IBM e-business. Communication and data collection constraints are reduced with Web-based production of goods and services. Using database management, data warehouse and data mining technologies, the Web can facilitate interaction with customers and suppliers, data collection, and data analysis processes (Wang, Head, Archer 2012).

Outsourcing of service functions is becoming popular. By strategically outsourcing and focusing a company's core competencies, managers can leverage their firm's limited skills and resources for increased competitiveness.

Venkataraman and Henderson 2013 asserted that three interdependent vectors, the virtual encounter, virtual sourcing, and virtual expertise, are integral in realizing a virtual organizational structure.

Outsourcing offers firms the option of securing many, if not all of the capabilities necessary to conduct business-to-business and business-to-consumer EC.

The commercial applications on the Internet and their integration, with internal information systems such as intranets and enterprise resource planning (ERP) systems, have resulted in significant changes in networking and other technologies available for interorganizational information systems (IOS), allowing other business functions to make use of these networks (Wang, Head, Archer 2012). More advanced IOS extensions that affect supplier–customer relationships include Web-based interfaces, integration with supplier catalogues and internal information systems, and built-in business transaction rules based on purchase limits or negotiated contracts. Extremely close supplier–customer relationships, such as those between parts suppliers and automobile manufacturers, can encourage the use of IOS to link suppliers to customer inventory and production forecast data, transferring to suppliers the responsibility for automatic replenishment.

3.5 Sales and Distribution

EC looks like it is finally coming into the mainstream and retailers are beginning to realize its key role in customer service. A large number of potential web shoppers abort their transactions in frustration over the process and have security fears about web-based transactions. Powerful techniques have been developed in the Internet framework to support the security requirements that are the foundation of EC (e.g., integrity, authentication, authorization and non-repudiation). Also, EC models for business-to-business and consumer-to-business transactions have been developed.

Moreover, the necessary regulation framework is being settled [28]. Notwithstanding technological support, human contact is still an important aspect that makes shopping in the physical world more comfortable to most people than shopping online.

So far, many people who surf retail web sites for products or services end up completing the commercial transaction over the phone. Strategies and products for bringing better customer service to EC are beginning to emerge. Internet telephony may be the missing link in the web shopping process. In the increasingly crowded arena of online shops and full-fledged e-malls, Internet protocol (IP) calling may be a strong point of differentiation. If vendors can harness IP voice technology to create icons and connections for live contact and call-back customer assistance, it could vastly increase the efficiency and the value of existing retail web sites and provide a more solid business model for launching new EC ventures.

The future pattern of competition between businesses is being reshaped by a number of new technical systems that provide new channels through which to reach consumers, and which allow the entry of new competitors into the established, once difficult to penetrate markets.

Companies formerly engaged solely in manufacturing and selling to intermediaries, like large textile and apparel manufacturers, have recognized opportunities created by these new technologies to compete directly with large retailers. Manufacturers are faced with a continual squeeze on profit margins for branded goods as retailers increase their buying power through increased scale of operation (larger size). Wal-Mart's practice of "power buying" is a good example – Wal-Mart dictates the terms of exchange and manufacturers can "take it or leave it." Manufacturers face stiff competition from retailers who are increasingly emphasizing their own store brands, which quite often are produced in developing nations at a very low cost, forcing manufacturers to search for ways to compete more effectively and restore profitability. Information gained at the point of sale and control of display space allocation in stores, once gave retailers great advantage in increasing the market shares of their own brands (Graham, Hardaker, 2013). Additionally, retailers demanded high product variety from manufacturers, but it did not necessarily translate into display of the manufacturers full range of products within the retail establishments. Where there are conflicting views on marketability, only a limited number of products can gain shelf space.

For manufacturers, there are significant advantages to be gained from using new distribution channels to give visibility to their full range of products and to improve their competitive position by establishing close direct contact with those who buy their products. EC provides manufacturers with a great opportunity to sell and distribute directly to final customers.

One of the emerging EC technologies that some manufacturers have investigated is the smart Kiosk.

These are sophisticated devices spawned from the automated teller machine (ATM) systems used by banks. Touch screen driven terminals linked to distant servers use hypermedia systems to provide information on

products and support credit card purchases. Kiosks are thought suitable for location in high access public sites such as entertainment complexes, fast food restaurants, airports and train stations [30]. Kiosks can be used in retail stores to widen the range of products that are offered and to provide additional product information. They might also provide a supplement to the development of Internet selling-providing access points for those who do not have Internet access.

Obviously, these systems, as with other alternatives to traditional in-store retailing, have to be supported by effective networks of manufacturing or warehouse locations that can rapidly deliver products to customers. In this, as with the broader changes in supply chain management, the role of logistics is increasingly critical to success – it is not enough to sell a product at a competitive price, one must get it to the consumer fast to be considered a viable alternative to traditional store retailers.

Alternative marketing channels such as the Internet, and interactive cable and satellite-based teleshopping, are currently believed to offer great promise in changing the landscape of modern retailing. During a transitional stage, the Internet was mainly used to provide product information and to project a specific company image via web pages, but the number of retailers and manufacturers selling via the Internet is increasing daily.

A number of virtual malls have been developed to provide display space for groups of retailers, including smaller companies. Use of the Internet for selling is partly dependent on confidence in the security of Internet transactions.

It is note worthy, therefore, that encryption techniques and related security technology have improved to the point that Internet transactions may actually be less risky than traditional face-to-face and telephone transactions. Faster Internet access made possible by better phone modems, cable modems, faster processors, increased RAM, and more, have like-wise played a role in the expansion of Internet based EC.

The Internet can actually be used to distribute many informational products, as well as products like software and music that can also be digitized. Internet distribution can produce significant savings in shipping, and it facilitates delivery at speeds only hoped for by those using other, more traditional delivery modes such as truck, air, and rail. Even those who use traditional modes of transportation can use Internet based tools to increase customer service.

Web-based order tracking has become commonplace. It allows customers to trace the shipment of their orders without having to contact the shipper directly. UPS was one of the pioneers in offering this web-based customer service.

3.6 Human Resource Management

The labor market has reached the web. One need only key in “jobs” in a search on nearly any search engine to discover the extent to which recruiters and job hunters have invaded the web.

Sites like Asia exact.com and job.com abound on the web. The web is now a good place for recruiters to go in search of employees, and for job hunters to go in search of jobs.

Many manufacturers, retailers, and service providers now advertise job openings on their own sites, making it easy for qualified applicants to contact them. Further-more, the data supplied by applicants can be directed to a database, making it very easy for the HRM personnel to limit their examination of applicant data, to only those meeting specific search criteria.

Some companies have made it possible for employees to manage their benefits and retirement accounts via the web. Employees can access information concerning their benefits or retirement accounts, and they can in many instances make changes themselves, without the assistance of a HRM representative.

This is convenient for employees and it is a time saver for HRM employees, who are relieved of some of the tasks related to supplying information to employees about benefits, retirement, policies, and more. One might not initially think of these things as EC, but they do fall within the domain of EC. Multimedia training and education is likewise possible with the Internet. Education and training can be purchased and delivered via the Internet, Extranets or Intranets. A major advantage of this approach is that those using the services can opt to use them at a convenient time, and at their own pace, unlike education and training provided through seminars, or the traditional classroom environment. Much of the education and training made available in this way is interactive in nature, which enhances its value to users by making it less boring and more effective.

3.7 Warehousing

EDI can help to minimize warehousing cost. EDI enables minimal stocks to be held with the resultant saving in the costs of storage, insurance, warehousing and security. Improved audit trails lead to better stock management

and account- ability. Reduction in manual processing reduces the need for people, thus labor cost savings are possible. Just-in-time manufacturing refers to the ability to produce minimal sized batches of finished goods, only when needed, i.e. responding to market pull; in an extended supply chain, EDI leads to minimal stock holdings by all parties and hence a reduced supply chain system operating costs. EDI also helps to improve cash flow – vast improvements in matching invoices against orders and receipts become possible leading to timely payment. Reduced stock handling saves money (Davis, Buchanan, Brodie 2011).

3.8 Supplier Development

EC's access to information and suppliers can empower buyers by giving them access in turn to a larger number of alternative products, and by allowing them to consider a larger number of vendors. Companies can also establish contact and do business with a wider range of trading partners and customers. Many organizations can do business globally because EC can reduce and even eliminate barriers associated with time and distance (Levis, 2006) Intelligent agents can assist buyers in finding the best prices on products and the most favorable terms available from suppliers. These intelligent agents can do in seconds, or perhaps minutes, what might take a person days or weeks to do using traditional approaches to comparison shopping which require phone, catalogues, and lots of time.

Networks can also help businesses by communicating more often and more effectively with suppliers and customers, using a variety of media that provide for richer, more personalized communications. More information can be exchanged between internal and external entities, which previously had no contact with each other.

Businesses have shown tremendous interest in using the Internet as a means for building stronger relationships with customers, suppliers and business partners as well as in using Internet-based networks internally to facilitate collaboration between employees, dissemination of information, and reduction of communication expenses (Decina, Trecordi 2012).

4. A Framework for Improving the Operations in an E-Commerce Environment

As the ever-growing WWW becomes more popular, EC promises to become a mainstay of modern business (Griffith, Elson, Amos 2012). Enterprises are generating demand for Internet connectivity through the development of new service offerings that provide value to customers. Many people think EC is just having a web site, but EC is much more than that.

There are dozens of applications of EC such as home banking, shopping in online stores and malls, buying stocks, finding a job, conducting an auction and collaborating electronically on research and development projects (Aaron, Decina, Skillen, 2010). To execute these applications, it is necessary to have supporting information, and organizational infrastructure and systems. Companies now find that the development of a WWW presence is a competitive necessity, particularly for retailers who need to establish online storefronts. Even so, there are few useful frameworks in the EC literature to help managers understand the potential of EC.

The framework proposed herein relates E-commerce application areas and EC tools and systems to the various functional areas of an organization to suggest how EC might support functional activities (see Table 1). For example, marketing can use e-commerce tools and systems such as B2B systems, Internet ordering, and Web sites to promote products or services, develop sales channels, achieve direct cost savings, reduce cycle time, and enhance and expand customer services.

Similarly, production can apply the e-commerce systems such as B2B systems; Internet powered MRP, ERP, SAP and BAAN are applied for effective production, planning and control, scheduling, inventory management and quality control. WWW communication, e-mail, and research can assist in supplier development, data mining and data warehousing, for more productive models partnership formation and supplier development.

E-commerce technologies can be used in other functional areas such as purchasing, design, sales and distribution, human resource management and warehousing (see for further details, Table 1).

Table 1. Application of e-commerce in operation

Organizational functional areas	E-commerce applications and/or contributions	E-commerce tools and systems
Marketing	Product promotion, new sales channels, direct savings, reduced cycle time, customer services	B2B e-commerce, Internet ordering, Website for the company
Purchasing	Ordering, fund transfer, supplier selection	EDI, Internet-purchasing, EFT
Design	Customer feedback, research on customer requirements, product design, quality function deployment, data mining and warehousing	WWW integrated CAD, Hyperlinks, 3D navigation, Internet for data and information exchange
Production	Production planning and control, scheduling, inventory management, quality control	B2B e-commerce, MRP, ERP, SAP, BAAN, IBM e-commerce (web integrated)
Sales and distribution	Internet sales, selection of distribution channels, transportation, scheduling, third party logistics	Electronic funds transfer, On-line TPS, Bar-coding system, ERP, WWW integrated inventory management, Internet delivery of products and services
Human resource management	E-recruiting, benefit selection and management, training and education using WWW	E-mails, interactive web sites, WWW based multimedia applications
Warehousing	Inventory management, forecasting, scheduling of work force	EDI, EFT, WWW integrated inventory management
Supplier development	Partnership, supplier development	WWW assisted supplier selection, communication-using Internet (e-mails), research on suppliers and products with WWW and intelligent agents

5. Summary of Findings and Conclusions

By examining the evolving role of e-commerce on the operation of manufacturers, retailers, and service providers. A framework for describing EC components and their role in operations is set forth. For companies that fully exploit its potential, EC offers the possibility of breakthrough changes; changes that so radically after customer expectations that they redefine the market or create entirely new markets.

To reap the benefits of EC, firms must understand its potential, its components, their own businesses, and the businesses of trading partners.

Businesses must focus on strong partnerships and the core products and structure that make EC possible. They must define, develop, and use the EC infrastructure that will empower their businesses to take advantage of new business opportunities. Development of effective strategies for achieving competitive advantage through EC will be necessary for success in the 21st century.

EC requires substantial infrastructure planning. Pursuing EC goals with underpowered hardware equipped with inadequate bandwidth, ill-considered software, and no coherent data management strategy is a recipe for disaster.

Infrastructure planning is critical to success. A badly designed system performs poorly at best and at worst invites security problems. The infrastructure must be designed with sufficient flexibility to allow for adaptive change, as will be surely mandated with the continued evolution of EC.

Good infrastructure planning can make the difference in whether future EC developments create problems or opportunities for a business. Historically, many infrastructure services have been provided by subscription with direct monthly aggregated billing. EC enables other business models such as immediate payment for services. Rather than each provider providing separate user billing, a common shared billing infrastructure, similar to the

credit card associations, could be developed. This may be more flexible and cost-effective and it may reduce credit risks to providers.

A necessary ingredient of EC, user authentication to prevent fraud, has a major disadvantage for users with the loss of privacy. Authentication allows providers to log user activities and data warehousing across a variety of suppliers and providers. Without definitive privacy policy, the development of a dynamic market may be stifled. A customer care organization can preserve user anonymity and enforce privacy policy.

The world around us is rapidly changing. The above-mentioned issues must be addressed, as must others that exists, or will arise. The Internet and other EC related developments have the potential to radically change the ways in which we communicate, interact, receive information and entertainment, and acquire goods and services. For businesses to survive and prosper in the 21st century and beyond, they must develop business

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CAMEL Analysis on Performance of ASEAN Public Listed Banks

Rossazana Ab-Rahim¹, Norlina Kadri¹, Amy-Chin Ee-Ling¹, Abdul Alim Dee¹

¹Faculty of Economics and Business, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia

Correspondence: Rossazana Ab-Rahim, Faculty of Economics and Business, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia.

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Abstract

The study is conducted to measure the performance of public listed banks in five ASEAN countries. This study covers 63 public listed banks from Malaysia, Singapore, Thailand, and the Philippines over the period of 1997 to 2011. The CAMEL analysis which is based on Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality, and Liquidity is employed in this study. The objectives of the study are to measure the performance of public listed banks as well as to compare the performance across countries. The results of the CAMEL analysis show that Singaporean public listed banks are the top performer as compared to their counterparts. Next, the comprehensive results reveal that Public Bank in Malaysia, United Overseas Bank in Singapore, Bank ArthaGraha in Indonesia, Bank of Ayudhya in Thailand and Union Bank of the Philippines are the top performed banks.

Keywords: CAMEL, financial ratios, banking, ASEAN

1. Introduction

Governor of Central Bank Malaysia has encouraged ASEAN for moving closer towards the regional integration among countries to become a single regional common market by the year of 2015 under the ASEAN Economic Community (AEC)¹. The ASEAN banks play an important role to support and foster the financial integration in this region, such as in mobilizing, allocating, and investing the savings of the society. The strong growth of ASEAN financial institutions are driven by the development of business fundamental and the increasing competitiveness of financial institutions in this region. Therefore, the ASEAN banking contributes a large part to the regional integration as it increases the corporation among ASEAN countries especially in the financial perspective. Hence, it is essential to have a comprehensive insight on the performance of banking industry as the bank performance has a significant influence on the investment, firm, growth, industrial expansion, and economic development of a country.

Concerning the banking reform history and the recent banking integration, this provides a unique feature to the ASEAN banking market for this study to embark upon the issue of ASEAN banking performance. In addition, ASEAN countries are also moving toward to strengthen their economic and financial ties. According to Phar (2010), the emerging economies in ASEAN countries will attract global investment banks to strengthen their financial position in this region. Besides, the ASEAN banking performance is relatively important in this region in order to attract international and domestic investors to invest in their institutions. Therefore, this study provides important information to understand the performance and efficiency of banking industry in particular, the ASEAN region with the increasing of contestable international market.

In conjunction to that, this study attempts to evaluate the performance of public listed banks in ASEAN region, specifically by in five major ASEAN nations, namely Malaysia, Singapore, Thailand, Indonesia, and the Philippines, which are also known as ASEAN-5. Being among the fast growing emerging countries and share similar social and economics characteristics (Echchabi,A. 2013), these countries are chosen for this study. Despite the fact that the development of financial sector is the key sector to ensure sustain economic growth in

¹AEC envisages the key characteristics such as a single market and production base, a highly competitive economic region, a region of equitable economic development, and a region fully integrated into the global economy.

developing countries, Mugume (2007) stated that there are limited studies conducted to measure the banking efficiency in developing countries as compared to developed countries.

During the outbreak of the Asian financial crisis in 1997, the currencies constantly depreciate against US dollar, the amount of unhedged borrowings as well as non-performing loans in the ASEAN countries were mounted. The banks in ASEAN region were exposed to high level of losses and bankruptcy, which had caused ASEAN economies to be mauled severely. During the post-period of the Asian Financial Crisis in 1997/98, the crisis-affected countries have implemented efforts of restructuring process and reforms in order to recover and sustain their banking system from continuing deteriorated. After the crisis, banks regulators implemented several measures to reform the banking system with the aim of providing efficient banking services to the economy on a sustainable basis (Garcia, 1997). According to Barry et al. (2010), the bank restructuring program took place instantly after the crisis in 1997 until the early of 2000s. Besides, the countries in ASEAN region also continuing with consolidation, merger, and acquisition process of local banks as well as begin to open the banking sector for the entry of foreign banks. Despite several studies has been conducted to examine the relationship between foreign bank entry and efficiency in developing countries, as stated by Claessens, Demirguc-Kunt, and Huizinga (2001), Fries and Taci (2002), and Bonin, Hasan and Wachtel (2005), the studies however provide mixed results.

There is growing number of Asian banks becoming public listed and the increasing of market capitalization of Asian financial institution (Wyman, 2012). Hence this study is important that it will contribute towards the regional economic as well as to further enhance and achieve the regional integration. Nonetheless, there are streams of studies on the banking performance of developed economics, especially from the US (Besar, 2011). This paper is organized as follows; next section reviews the theoretical motivation and existing empirical studies to embark upon the issue of banking performance. Next section, discusses on data and methodology, follows by the interpretation of results and discussion while conclusion in the last section.

2. Literature Review

Financial statement analysis is widely applied by different interested groups such as investors, managers, and creditors to measure the historical results, current financial position as well as to predict the future financial performance of the banks; hence, the financial management theory is applied in this study. The theory refers to the financial statement analysis as a process of assessing the relationship between the financial statement's component parts in order to get a better understanding of the performance and the position of the firm (Khan and Jane, 2007). Financial statements are commonly analyzed by using the ratio analysis method. The ratio analysis is the use of ratio to interpret the financial statements thereby the strength and weakness of the company as well as its historical, current and future financial state can be determined (Bhatawarka, 2010). In spite of the size, the ratio analysis can also relate and examine the risk and return of the company in the industry. In addition, the ratio analysis can make the analyzed financial results comparable as to identify the deficiency and take the corrective actions to solve the problem. The comparison can be made in two ways which are the comparison with historical result (trend analysis) and with other competitors in the same business line or industry average. Generally, the financial ratio analysis provides information about a bank's performance on comparative basis and allows the conclusion about the bank performance to derive.

Existing studies on operating performance of banks had tended to employ CAMEL analysis and financial ratios. CAMEL analysis applies financial ratios in evaluating the banking operations based on five dimensions include capital adequacy, asset quality, management efficiency, earnings quality and liquidity. The ratios based on CAMEL framework are able to provide a comprehensive view of banks performance (Nimalathasan, 2008); this performance evaluation can be measured from various aspects which include costs, revenue and profit (Johnes, Izzeldin and Pappas, 2009); it can be calculated and interpreted easily (Hassan and Bashir, 2003); it allows comparison between banks and serves as the benchmark which is generally the average of the industry sectors (Halkos and Salamouris, 2004).²

Existing studies on the CAMEL performance in Asian banking sector cover Nepal, Taiwan, Japan, and India. For instance, Jha and Hui (2012) evaluate the financial performance comparison of commercial banks with different ownership structured in Nepal from period of 2005 to 2010. Moreover, the results estimate the return on assets is significantly influenced by the interest expenses to total loan, net interest margin and capital adequacy ratio whereas the return on equity is significantly influenced by the interest expenses total loan, net interest

²However, there are few drawback of the CAMEL analysis that is there is no any criteria to select a ratio that is acceptable by all interested parties and the ratios calculated from the information in financial statement might either be simplified or added and it might not meet the needs of the users (Ho and Zhu, 2004).

expenses to total loan, net interest margin and capital adequacy ratio. Next, studies on Indian banking sector are contributed by Kumar, S. & Gulati. (2008), Prasad and Ravinder (2012), and Reddy (2012). Kumar et al. (2008) find out that the private banks are more soundness than the public banks; the results also show that the private banks move faster towards convergence as they grow at a faster pace than the public banks. In contrary, Prasad (2012) states that the performance of public banks and private banks is indifference. Reddy (2012) discovers that the performance of public banks has significantly improved and it reflects the positive impact of the financial reforms from interest rate liberalization, directed credit and investment rationalization as well as the increase of the competition. All the mentioned studies utilize CAMEL method to estimate the performance of banks.

Huang, Wen, and Yu (2012) examine the financial determinants of bank performance in Taiwan from the period of 2005-2007 (pre-crisis period) and during 2008-2010 (post-crisis period). The findings show that the relationship between the return on assets and certain CAMEL ratios remain strong. Moreover, in terms of asset quality, it shows that there is high protection against external shocks during the pre- and post- crisis period.

Next, Said and Tumin (2011) utilize the return on average assets (ROAA) and return on average equity (ROAE) as the proxy to examine the performance of commercial banks in Malaysia and China from 2001-2007. The findings imply that the financial ratios have different impact on the performance of banks in both countries except for capital and credit ratios. It shows that the bank performance in China tends to be influenced by the operating ratios but there is no significant influence on the bank performance in Malaysia.

As far as this study is concerned, there is no existing study on estimating the financial performance of ASEAN banking sector, thus this study attempts to fill the gap in the existing literature. Existing studies such as Karim (2001), Sufian and Habibullah (2009), and Chan and Karim (2011), tend to confine their analysis on the efficiency performance of ASEAN banking, specifically in Indonesia, Malaysia, Philippines, and Thailand, or also known as the ASEAN-4. Mogid, Tahir, and Haron (2012), however have extended their studies to another four additional countries namely Singapore, Cambodia, Brunei, and Vietnam.

Some of the studies apply stochastic frontier approach to evaluate the bank efficiencies of different ASEAN countries. For instance, Karim (2001) evaluate the bank efficiency of ASEAN-4 from 1989 to 1996. The results show that there are significant differences in efficiency scores among the banks in the four selected countries. Besides, the results also show that higher cost efficiency enjoyed by larger banks as compared to smaller banks. In general, study indicates the ASEAN banks benefit from the increasing returns to scale. Next, the study of Chan and Karim (2011) evaluate the efficiency of foreign banks from the ASEAN-4 countries from 2001 to 2007. Moreover, the results indicate that the foreign banks from developed countries are more efficient than those in the developing countries. The foreign banks in Malaysia were found to be the most profit and cost efficient while the foreign banks in Indonesia has the least. The study also suggested that in order to attract more foreign banks into ASEAN region, the banking sector should be liberalized to enhance the competitiveness of foreign and local banks which lead to the higher banking efficiency in ASEAN.

On the other hand, Sufian and Habibullah (2009) measures the performance of ASEAN-4 banking sectors by using Data Envelopment Analysis (DEA) from the period 1999 to 2005. The study reveals that based on revenue approach, the estimated bank technical efficiency is consistently higher as compared to the intermediation approach. Besides, the results also specify that the banks tend to be inefficient in a more concentrated market. Nevertheless, when the study controls for the countries which undertake IMF program, it has shown that the concentration ratio has positive relationship with the level of bank efficiency. In general during the post crisis period, the higher concentrated banking market that undertakes the IMF program has greater efficiency in their intermediation function.

Mogid et al. (2012) extend their scope of studies to Singapore, Cambodia, Brunei, and Vietnam. In their study, they examine whether the inefficiency of banks is related to its risk taking and capital position in six ASEAN countries (Malaysia, Indonesia, Thailand, the Philippines, Singapore, Cambodia, Brunei and Vietnam) from the period of 2003 to 2008 by using accounting ratios. Throughout the study, it is found that, the inefficiency equation show CAP and SIZE negatively related to inefficiency while RISK is insignificant. In the risk equation, RISK has negative relationship with CAP and INEFF. Nevertheless in the capital equation, CAP negatively related to RISK but not INEFF.

Other than that, Tahir, Moghid, and Haron (2012) have also studied the determinants of cost inefficiency in commercial banks by using the SFA approach and Tobit regression analysis. Tobit regression analysis is used to determine the estimated cost inefficiencies on bank specific characteristics (size, loan to total asset, equity to total asset and personnel expenses to total expenses) and environmental variables (corruption, economic growth and economic freedom). The first finding show that the average bank cost inefficiency during the period of study is around 33% of the observed total costs. Singapore's banks show the lowest cost inefficiency as compared with

the banks of other ASEAN countries. The second finding identifies the bank specific variables and economic growth as important determinants in influencing the bank cost inefficiencies. Although the influences of corruption and economic freedom are evident, it only limited to some extent.

There is limited of studies that measure the performance of ASEAN banking (such as Tahir, 1999; Karim, 2001; Sufian and Habibullah, 2009 and Chan and Karim, 2011). Thus, this study is implemented to fill the gap in the existing literature. The CAMEL Analysis, which is useful in providing private supervisory information to measure and monitor the bank performance, is applied in this study to evaluate the performance of public listed banks in the five selected ASEAN countries.

3. Data and Methodology

In order to provide an insight of ASEAN banking performance, the set of annual data used in this study covers the period from 1997 to 2011, by capturing the Asian financial crisis in 1997 as well as the global financial crisis in 2008. A total of 63 public listed banks are chosen among the five ASEAN countries as which 10 listed banks from Malaysia, 3 listed banks from Singapore, 10 listed banks from Thailand, 28 listed banks for Indonesia, and 12 listed banks for the Philippines. The set of data applied in this study is acquired from the secondary sources, namely Thomson Reuters Datastream 5.1.

This study has adopted the CAMEL analysis framework in evaluating the performance of public listed banks in ASEAN countries. CAMEL analysis has been a common rating system applied by the government, regulators, and researchers in measuring the bank soundness. Dang (2011) noted that the scholar often used the CAMEL framework to proxy bank specific variables. These variables also known as the internal factors, which are under the control of the bank to manipulate and it is different for each bank. Based on Ongore and Kusa (2013), these factors include size of capital, composition of credit portfolio, management quality, interest rate policy, state of information technology, labor productivity, ownership, risk level, bank size, and etc.

Through CAMEL analysis, the financial performance of banks can be evaluated based on five perspectives. These include the Capital adequacy, Assets quality, Management efficiency, Earning quality and Liquidity. The choice of ratios for each element is based on the study of Apsal and Malhotra (2012) and Dang (2011).

According to Prasad and Ravinder (2012), capital adequacy refers to the banks' overall financial condition and the management ability to meet the need of additional capital. Assets quality is a measure to determine the components of non-performing loans to total assets. The management efficiency reflects the effectiveness and efficiency of management. However, earning quality indicates the bank's ability to have a constant earning. The liquidity measure ensures the percentage of funds from depositors is invested in securities with high returns and generates profit to increase the liquidity provision for depositors.

Capital adequacy could be measured by capital adequacy ratio (CAR), Debt to Equity Ratio (D/E), and Advance to Assets Ratio (Adv/Ast). CAR measures capital position of bank. It is a ratio obtained by computing the total capital over total assets, which determines the ability and capacity of the bank to bear the reasonable level of losses which derived from the operation. The higher ratio indicates that the bank is adequately capitalized to its operation expansion, investors are protected, and the bank is stronger. Hence, this ratio ensures that the banks must have adequate capital for their business expansion. On the other hand, Debt to equity ratio indicates the bank's leverage. It shows the portion of debt and equity used by the bank to finance its assets. Higher ratios indicate less protection for creditors, depositors, and etc. As for advance to assets ratio, it reflects the aggressiveness of bank in lending which in turn lead to better earning of profit. Higher ratio is preferred as compared to lower one.

The assets quality is another element of CAMEL which measures the bank's strength. It identifies the kinds of advances that the bank has made in order to earn the interest income as well as the types of debtors of the bank. For instance, the loans given to the high rated companies, the interest rate charged will be lower than the interest rate charged to the doubtful companies. Assets quality can be measured by total investments to total assets (TI/TA) shows the proportion of assets are used for investment as compared to advances. The higher the ratio indicates the bank is more conservative as it maintains high cushion of investment as a safeguard against NPAs. Besides that, provision for loan loss ratio indicates the amount of expense that the bank set aside for future losses on bad loans (loan defaults). A bank with low provision for loan loss ratio shows that the bank is taking a small number of risky loans. However, the bank with high provision for loan loss ratio indicates that the bank is taking higher level of risks.

Next, following the notions of Uniform Financial Institutions Rating System (1997, p. 6), management quality generally shows the ability of board members and management team to measure, identify and controls the risks of business activities as well as to make sure the efficient, safety and sound operation in order to comply with the rules and regulations. Total advances to total deposits (TA/TD) is used to examine the management efficiency in

converting the bank deposits available excluding the other funds such as equity capital into advances to generate greater profit. Moreover, return on equity (ROE) is a ratio which reflects the profitability of the bank. It is obtained by computing the profit after-tax over total equity.

Earning quality is an important element in the CAMEL model as it determines the ability of bank to earn its profit. Besides, it identifies the future growth and sustainability of bank. In determining the earning quality, operating profit to total assets (OP/TA) is used to specify the profit that bank earned from its operations for every dollar invested in the total assets. Net profit to total asset (NP/TA) however shows the return generated on the assets used. Higher ratio is preferable as it shows the greater earning potential of bank. Besides that, interest income to total income (II/TI) is also important in determining earning quality as it shows the percentage of income bank generated from lending activities over the total income that the bank had generated during the financial year. The earning ability of bank at a given level of total assets is indicated by net interest margin to total assets (NIM/TA). Net interest margin is the difference between the interest income and interest expense.

The final element of CAMEL Analysis is liquidity, which measures the bank's ability to meet obligations. It is the most important aspect for a bank business activity since the bank faces with liquidity risk can affect their profitability as well as their image. Liquid assets to total assets (LA/TA) are the ratio that evaluates the overall bank's liquidity. Liquid assets include cash in hand, short notice, money at call, and balance with other financial institutions (local or abroad). Meanwhile, liquid assets to total deposits (LA/TD) disclose the level of liquidity available to the bank's depositors. The total deposits consist of savings deposits, term deposits, demand deposits and deposits from other banks or financial institutions.

4. Results and Discussion

This section provides the description statistic of the results obtained through CAMEL analysis for ASEAN banking sector and also the performance of the banking sector in each of ASEAN country.

Table 1. CAMEL Analysis on Performance of ASEAN Banking Sector

Capital Adequacy	CAR (%)		D/E (Times)		Adv/Ast (%)			
	Avg.	Rank	Avg.	Rank	Avg.	Rank		
Malaysia	12.40	4	2.212	5	66.06	2		
Singapore	13.53	3	1.612	3	64.41	3		
Indonesia	9.07	5	0.640	1	43.66	5		
Thailand	18.22	1	1.949	4	77.86	1		
Philippines	17.85	2	0.793	2	47.58	4		
Asset Quality	TI/TA				Prov. Loan Loss			
	Avg.		Rank		Avg.		Rank	
Malaysia	17.44		2		1.16		2	
Singapore	18.69		4		0.48		1	
Indonesia	17.83		3		1.86		4	
Thailand	15.04		1		2.01		5	
Philippines	24.29		5		1.27		3	
Management Efficiency	TA/TD				ROE			
	Avg.		Rank		Avg.		Rank	
Malaysia	96.68		3		8.26		3	
Singapore	102.35		2		10.41		1	
Indonesia	70.96		4		-7.68		4	
Thailand	336.16		1		-91.20		5	
Philippines	67.04		5		8.41		2	
Earning Quality	OP/TA		NP/TA		II/TI		NIM/TA	
	Avg.	Rank	Avg.	Rank	Avg.	Rank	Avg.	Rank
Malaysia	1.10	3	0.72	3	75.06	3	2.14	4
Singapore	1.19	2	0.94	2	78.40	2	1.73	5
Indonesia	-0.18	5	-0.48	5	66.22	5	2.83	2
Thailand	0.12	4	-0.20	4	78.67	1	2.68	3
Philippines	1.25	1	1.04	1	73.26	4	3.30	1
Liquidity	LA/TA				LA/TD			
	Avg.		Rank		Avg.		Rank	
Malaysia	4.62		4		6.97		4	
Singapore	5.74		2		9.12		2	
Indonesia	5.35		3		7.33		3	
Thailand	1.72		5		4.08		5	
Philippines	9.58		1		13.28		1	

Notes. CAR- capital adequacy ratio; D/E - debt to equity ratio; Adv/Ast – advance to assets ratio; TI/TA – total

investments to total assets; TA/TD - total advances to total deposits; ROE- return on equity; OP/TA – operating profit to total assets; NP/TA; net profit to total assets; II/TI – interest income to total income; NIM/TA – net interest margin to total assets; LA/TA – liquid assets to total assets; LA/TD- liquid assets to total deposits

Table 2. Composite Ranking for Overall Performance

Country	C	A	M	E	L	Avg.	Rank
Malaysia	3.67	2.00	3.25	3.25	4.00	3.18	3
Singapore	3.00	2.50	1.50	2.75	2.00	2.35	1
Indonesia	3.67	3.50	3.00	4.25	3.00	3.68	5
Thailand	2.00	3.00	3.00	3.00	5.00	3.20	4
Philippines	2.67	4.00	3.50	1.75	1.00	2.58	2

Table 2 represents the overall performance of banking sectors in ASEAN countries based on CAMEL Analysis approach. The composite average obtained for the overall evaluation is based on the empirical results as shown in Table 1. Singapore appears to be the top performer with the composite average of 2.35, followed by the Philippines with composite average of 2.58. Malaysia and Thailand obtained the third and fourth position with composite average of 3.18 and 3.20. However, Indonesia has the last position with the composite average of 3.68. Referring to Table 1, Singapore has performed very well in terms of management efficiency with the group average of 1.50 compared to the other countries. Based on The Banker (2013), the three banks from Singapore which are DBS Group Holdings, Overseas-Chinese Banking and United Overseas Bank have dominated the top position in the ranking of ASEAN banking sector by Tier 1 capital and considerable margin.

Table 3. CAMEL Analysis on Performance of Banking Sector in Malaysia

Malaysia	C	A	M	E	L	Avg.	Rank
AMMB Holdings	4.67	7.00	4.00	6.25	2.50	4.88	3
RHB Capital	8.00	5.50	4.50	7.25	7.50	6.55	8
Public Bank	3.67	3.50	3.00	1.50	6.00	3.53	1
Malayan Banking	8.00	5.00	4.50	3.00	1.00	4.30	2
Hong Leong Financial Group	5.00	4.00	4.00	7.25	8.00	5.65	6
Hong Leong Bank	5.00	2.50	5.50	4.00	7.50	4.90	4
CIMB Group Holdings	5.33	7.50	5.50	4.00	3.50	5.17	5
BIMB Holdings	4.67	9.00	9.00	8.00	3.00	6.73	9
Alliance Financial Group	5.00	2.50	10.00	6.75	10.00	6.85	10
Affin Holdings	5.67	8.50	5.00	7.00	6.00	6.43	7

Public Bank has consistently ranked the top position in terms of capital adequacy, management efficiency, and earning quality, with the average of 3.67, 3.00, and 1.50 respectively compared to other banks in Malaysia. Overall, Public Bank is ranked the top position with the composite average of 3.53. This is followed by Malayan Banking with composite average of 4.30. Meanwhile, Alliance Financial Group is at the last position with the composite average of 6.85.

Table 4. CAMEL Analysis on Performance of Banking Sector in Singapore

Singapore	C	A	M	E	L	Avg.	Rank
United Overseas Bank	2.33	2.50	1.50	1.00	1.00	1.67	1
Oversea-Chinese Banking	2.33	1.50	1.50	2.00	3.00	2.07	2
DBS Group Holdings	1.33	2.00	3.00	3.00	2.00	2.27	3

As for Singapore, United Overseas Bank is the top performer with the composite average of 1.67. In every sub parameters of the CAMEL Analysis component, United Overseas Bank has almost consistently achieved the group average between 1.00 to 2.50, indicating that it has performed well compared to Oversea-Chinese Banking and DBS Group Holdings. It has performed the best in Earning Quality as well as Liquidity with the group average of 1.00.

Table 5. CAMEL Analysis on Performance of Banking Sector in Indonesia

Indonesia	C	A	M	E	L	Avg.	Rank
BRI Agroniaga	21.33	9.00	25.50	23.25	27.00	21.22	27
Bank Artha Graha International	10.33	7.50	4.50	9.50	11.00	8.57	1
Bank Bukopin	18.67	8.50	14.50	18.00	20.50	16.03	20
Bank Bumi Arta	11.00	6.50	20.00	14.00	19.50	14.20	14
Bank Capital Indonesia	23.00	8.50	25.50	21.50	28.00	21.30	28
Bank Central Asia	13.33	22.0	12.50	6.25	5.00	11.82	7
Bank CIMB Niaga	16.33	19.5	4.00	20.50	10.50	14.17	13
Bank ICB Bumiputera	12.67	13.0	18.00	16.75	14.00	14.88	17
Bank International Indonesia	10.33	24.5	16.50	17.25	7.00	15.12	18
Bank Mandiri	16.33	22.5	13.00	11.00	15.00	15.57	19
Bank Mayapada Internasional	8.00	6.50	13.00	16.50	17.50	12.30	8
Bank Mega	19.33	17.5	9.50	9.00	2.00	11.47	4
Bank Negara Indonesia	9.00	25.5	7.50	20.00	4.50	13.30	10
Bank Nusantara Parahyangan	12.33	14.5	11.50	12.50	15.00	13.17	9
Bank OCBC NISP	11.00	15.5	8.50	9.25	13.50	11.55	5
Bank of India Indonesia	7.00	10.0	12.50	5.75	8.50	8.75	2
Bank Pan Indonesia	9.67	22.0	7.50	3.50	16.00	11.73	6
Bank Permata	12.00	22.0	12.00	17.25	7.00	14.05	12
Bank Pundi Indonesia	12.67	15.5	19.00	15.00	7.00	13.83	11
Bank QNB Kesawan	12.33	15.5	19.50	18.25	17.50	16.62	22
Bank Rakyat Indonesia	12.67	18.5	6.50	4.25	2.00	8.78	3
Bank Sinarmas	22.00	4.50	24.50	22.50	24.00	19.50	26
Bank Tabungan Pensiunan Nasional	18.67	7.00	21.50	13.00	26.00	17.23	23
Bank Victoria International	19.33	23.5	17.00	16.75	11.00	17.52	24
Bank Windu Kentjana	17.67	7.50	23.00	15.75	25.00	17.78	25
Bank Danamon Indonesia	16.67	26.0	3.50	19.50	7.00	14.53	15
Bank Ekonomi Raharja	15.67	8.50	18.50	17.25	22.00	16.38	21
Bank Himpunan Saudara 1906	16.67	4.50	17.00	12.00	23.00	14.63	16

Based on the composite average result, Bank Artha Graha is ranked the first position out of 28 banks evaluated in Indonesia. Although it has never been ranked the top position in any of the CAMEL indicators, but it has consistently achieved good performance in every sub-parameter of each indicator, which resulted the composite average of 8.57. Bank of India Indonesia is then ranked second with the composite average of 8.75. However, Bank Capital Indonesia is the least performer with the highest composite average of 21.30 that reflects poor performance in every CAMEL indicator.

Table 6. CAMEL Analysis on Performance of Banking Sector in Thailand

Thailand	C	A	M	E	L	Avg.	Rank
TMB Bank	4.67	6.00	7.00	7.75	6.00	6.28	8
Tisco Financial Group	5.00	6.00	4.50	3.75	3.50	4.55	4
Thanachart Capital	6.00	8.50	1.50	7.25	9.50	6.55	9
Siam Commercial Bank	4.67	5.50	7.50	4.50	5.00	5.43	5
Krung Thai Bank	4.33	3.50	5.00	5.50	9.00	5.47	6
Kiatnakin Bank	5.00	5.00	2.00	2.00	6.50	4.10	2
Kasikornbank	4.33	4.00	5.50	4.75	2.50	4.22	3
CIMB Thai Bank	9.67	9.00	10.00	8.00	7.50	8.83	10
Bank of Ayudhya	3.67	2.50	5.00	5.75	1.50	3.68	1
Bangkok Bank	7.67	5.00	7.00	5.75	4.00	5.88	7

As seen in the above table, Bank Ayudhya is ranked the first in Thailand with the composite average of 3.68. The result indicates that Bank Ayudhya has performed relatively well in its capital adequacy; asset quality and liquidity which group average are 3.67, 2.50, and 1.50 respectively. In contrary, CIMB Thai Bank is ranked the last, with the composite average of 8.83.

Table 7. CAMEL Analysis on Performance of Banking Sector in the Philippines

Philippines	C	A	M	E	L	Avg.	Rank
Bank of The Philippines Islands	6.67	7.50	6.50	4.00	2.50	5.43	4
BDO Unibank	9.67	3.00	10.00	10.50	10.50	8.73	10
China Banking	4.67	10.50	4.50	3.25	8.50	6.28	9
Citystate Savings	3.33	1.00	6.50	8.50	12.00	6.27	7
Metropolitan Bank	5.33	6.50	7.00	7.00	5.50	6.27	7
Philippine National Bank	8.00	9.00	10.50	11.50	7.00	9.20	11
Philippine Savings Bank	4.67	4.50	5.50	3.75	10.50	5.78	5
Philippines Bank of Communications	10.67	7.50	10.50	9.75	8.50	9.38	12
Philtrust Bank	7.00	5.00	7.50	4.25	1.00	4.95	2
Rizal Commercial Banking	6.67	6.50	5.00	7.50	4.00	5.93	6
Security Bank	5.67	9.00	1.00	4.00	5.50	5.03	3
Union Bank of the Philippines	5.67	8.00	3.50	4.00	2.50	4.73	1

With the composite average of 4.73, Union Bank of the Philippines has been ranked the first out of 12 banks analyzed in Philippines. It is the best in earning quality for both operating to total assets and net profit to total assets ratios with 2.12% and 2.05%. This is followed by Philtrust Bank with composite average of 4.95. Philippines Bank of Communications is ranked the last position with composite average of 9.38 due to poor performance in all of the CAMEL indicators.

5. Conclusion

The study measures the performance of public listed banks in five major ASEAN countries; Malaysia, Singapore, Indonesia, Thailand and the Philippines. The CAMEL analysis is chosen to evaluate the bank performance based on five elements which are Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality, and Liquidity. Annual data is utilized to compute performance of banks from the period of 1997 to 2011. The bank performance is measured based on two perspectives. First, the performance of banking sector in ASEAN region will be evaluated. Second, the performance of banking sector in each of the ASEAN countries will be examined.

The results of the CAMEL analysis indicate that public listed banks in Singapore have the best performance comparatively to Malaysia, Indonesia, Thailand, and the Philippines. To sum up, Thailand's public listed banks have the best performance in capital adequacy, Malaysia's public listed banks has the best performance in asset quality, Singapore's public listed banks has the best performance in management efficiency, while the Philippines' public listed banks has the best performance in both earning quality and liquidity based on the indicators of CAMEL. It is identified that Public Bank in Malaysia, United Overseas Bank in Singapore, Bank Artha Graha in Indonesia, Bank of Ayudhya in Thailand and Union Bank of the Philippines in the Philippines as the public listed banks with best performance by country through the comprehensive results. The results of the study are important as the emerging economies in ASEAN countries will attract both local and global investment banks to invest and strengthen their financial position in the ASEAN region. Hence, the banking performance of the country in this region as compares to its counterparts is relatively important with the increasing of contestable international market.

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Factors Affecting on Gaining a Sustainable Competitive Advantage for Sri Lankan Higher Educational Institutes

Liyanachchi Mahesha Harshani De Silva¹, Charith D. Chitraranjan²

¹Assistant Lecturer, Department of Business Management, Faculty of Business, Sri Lanka Institute of Information Technology, Sri Lanka

²Department of Computer Science and Engineering, University of Moratuwa, Sri Lanka

Correspondence: Liyanachchi Mahesha Harshani De Silva, Assistant Lecturer, Department of Business Management, Faculty of Business, Sri Lanka Institute of Information Technology, Sri Lanka

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Abstract

Over the past few years, number of seats has grown significantly in Higher Education Institutes (HEI), thus it becomes prudent to look at the ways of improving decision making of the HEI. Thus, the aim of this study is to investigate factors affecting the sustainable competitive advantage. Since literature does not support strong underpinnings in this area, an exploratory and grounded theory-based study was designed to conduct this study. The main contribution of this research is that we propose factors to consider for an HEI to achieve sustainable competitive advantage. Our findings indicate that proper student-teacher relationship, maintaining good reputation, maintaining a high rank and good indexing's, maintain good relationships with industries, student participation in competitions, accreditation from reputable institutions are the most significant factors affecting the sustainable competitive advantage (AA) within Sri Lankan HEIs. To remain competitive and obtain competitive advantages, HEI decision makers can try to increase organizational performance by managing each dimension of core competence, i.e. Market profile; Innovation and Core Competencies.

Keywords: sustainable competitive advantage, grounded theory, higher education

1. Introduction

1.1 Background

More demanding customer base and global competition have led many organizations to look into new ways of achieving and retaining competitive advantage (Woodruff, 1997). Competitive advantage can be gained when an organization consistently outperforms other companies in the same industry. It gives the advantage of generating a greater value for the firm as well as shareholders. To be stronger with the advantage, the organization should gain a sustainable competitive advantage. However to achieve this, organizations should have the ability to compete in the volatile environment. This competitive advantage has defined in the literature as a way of producing superior methods and resources compared to competitors over a long period of time. The sustainability of competitive advantage can be gained based on three major characteristics of resources and capabilities: "Durability; which is the period over which a competitive advantage is sustained, Transferability; the harder a resource is to transfer the more sustainable the competitive advantage is, and finally Replicability; whether it can be replicated or purchased from a market or not" (Sadler, 1993).

Most of the organizations and markets operating in extremely competitive environments have accepted that their competitive advantages are no longer sustainable (Schl afke, Silvi, & M oller, 2012a). Therefore, new sources of competitive advantage are created, while others rapidly erode. Similar to business organizations, higher educational institutes have also been facing fierce competition in recent years due to the high demand for education worldwide. Thus, HEI should improve their decision-making process to achieve competitive advantage by increasing the efficiency and effectiveness. Sustainable competitive advantage within HEI is a contentious concept over decades but unfortunately, achievement has not been discovered as fast as expected due to the lack of understanding related to sustainability especially, in the Sri Lankan context.

Currently, Sri Lankan universities are in a process of promoting and investigating the methods of enhancing student learning experience. However, there is a limited number of measures and performance indicators to

guide decision-makers and practitioners of the HEI. Due to the intangible nature of the service, decision makers tend to ignore or overlook the quality factors over the marketing aspects. The increasing competition has led institutions to become more upbeat in their marketing but to be sustained in the economy there should be more than marketing tactics. Currently, there is a huge tendency of migrating students into international institutes due to the low facilities and recognition compared to international universities. Developed countries such as Canada, the USA, Australia and the UK are already in the process of marketing themselves to attract students from home and overseas for higher education. Therefore, as a developing country, it is necessary to build distinctive capabilities which are superior compared to the competitors in this market, not only within the country but also in the international market.

To date, less number of empirical research has been conducted in the area of sustainable competitive advantage (Ali, Asadi, Ga Sevi C, Jovanovi, & Hatala, 2013). Particularly in the Sri Lankan context, no research has been conducted to our knowledge. Therefore, an appropriate guidance to assist HEIs in successful competitive advantage is of utmost importance. Therefore, this paper proposes an effective measurement tool to benchmark current pedagogical performance standards and monitor the progress and achievement of future implemented practices designed to enhance the sense of community experienced by the student cohort. The objective of this study is to address the following question;

- What are the factors that have a strong effect on the achievement of a sustainable competitive advantage for Sri Lankan higher educational institutes?

2. Literature Review

As a consequence of fierce competition, today many companies, not only higher education institutes, argued that their competitive advantage is not sustainable. According to a past research of competitive advantage, Barney has stressed that a firm possesses sustained competitive advantage when it adopts a strategy that is “not simultaneously being implemented by any current or potential competitors and when other firms are unable to duplicate the benefits of this strategy.”(Barney, 1991). According to Mazrol, sustainability is defined as the ability to develop business strategies, which cannot be imitated by the competitors(Mazzarol & Norman Soutar, 1999). According to prior research competitive advantages measured by traditional barriers-to-entry variables, other economic rent proxies, and control variables, past superior performance, and sustained market share. In HEI competitive advantage is measured by the image quality of the institutes, market profile, and the degree of forward integration into the export channel, quality of the staff, student-oriented innovative culture and effective use of Information Technology.

This competitiveness is not limited to the customers. It is also applicable for gaining scarce resources as well. This has become an interesting area to discuss in HEIs due to the globalization and the growth of the educational customer base. Past studies have suggested that business process management is an enabler for a sustainable competitive advantage(Velazquez, Munguia, & Sanchez, 2005). Scholars have stated that core competencies should be developed within the organization in order to gain a sustainable competitive advantage(Agha, Alrubaiee, & Jamhour, 2011). The core competency can be defined as the knowledge of success or failures, an efficiency of operations, or positive responses to the challenges. Further, it suggested that core competencies are key ingredients for organizational success. Therefore, this factor can be considered as one of the indicators to achieve a sustainable competitive advantage(Agha et al., 2011).

According to the research of “A model of sustainable competitive advantage for education services” this advantage has derived from internal skills of the organization as below;

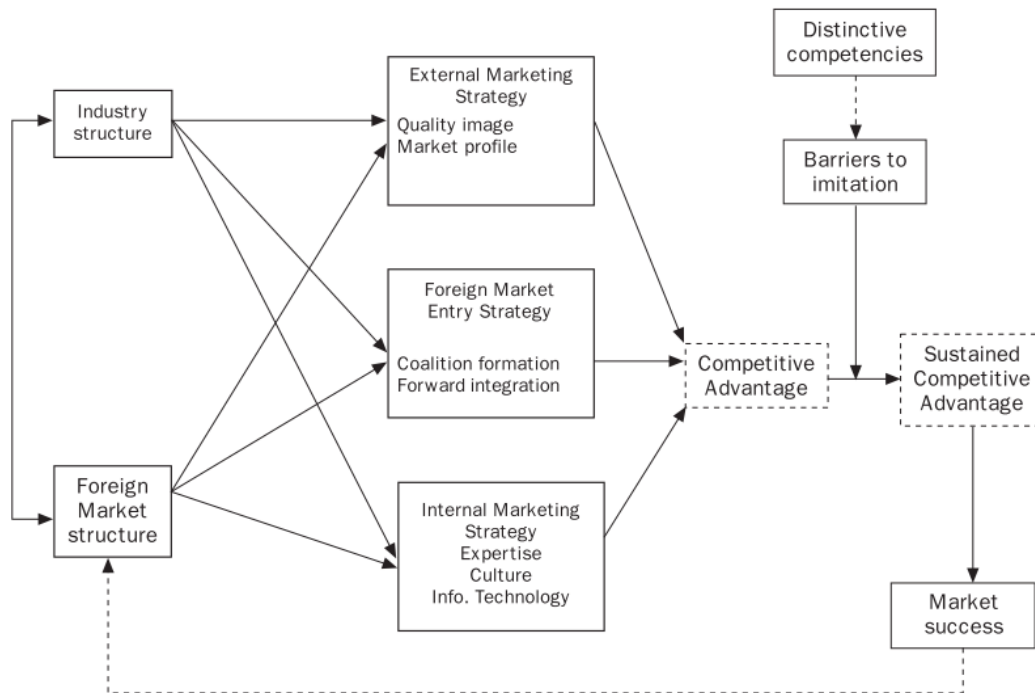


Figure 1. A model of sustainable competitive advantage for education markets

To bring the above discussed sustainability to HEI, it needs to focus at operational, managerial and strategic levels to gain a sustainable competitive advantage in this highly competitive markets (Schl afke, Silvi, & M oller, 2012b).

Currently, there is a tendency of ignoring the sustainable competitive advantage within the HEI due to the intangible nature. The main concern of the HEI is to increase the number of students, but this has a chance of reducing the sustainable competitive advantage.

Theoretically, Theories of Competitiveness, Theory of the Resources and Capabilities, and Stakeholders Theory are the ways of achieving the sustainable competitive advantage in any business. Even-though developed countries align their strategies with above theories, Asian countries such as Sri Lanka have not focused adequately on those areas when conducting HEI decision-making activities.

3. Methodology

The main concern of this paper is to identify the factors affecting the sustainable competitive advantage in HEI. To construct the methodology, we have mainly focused on a qualitative and inductive approach. There are mainly two forms of research approaches described as inductive and deductive. In induction, the researcher observes and collects facts and develop a theory as a result of the data analysis. But deduction initiates with a theory in the field, and afterward, the researcher figures out hypothesis, which is tested in an empirical investigation (Sekaran, 2013). Further, the deduction can be explained as a method of deriving conclusions by interpreting the meaning of the results of the data analysis. As an examples, research has reviewed that increasing the stocks was positively correlated to customer satisfaction from their data analysis, then research can deduce that to increase the customer satisfaction, the shelves have to be better stocked. As explained in the literature review, inadequate research and attentiveness is evident in relation to business intelligence and strategic advantage of different industries. This led this research to use the inductive method.

Through a qualitative approach, using semi-structured interviews and grounded theory techniques, we explored the perspectives and concerns of fifteen stakeholders regarding the sustainable competitive advantage in Sri Lankan Higher Education Institutes.

Data analysis was conducted by transcribing all the interview recordings in full and uploading textual data into qualitative data analysis tool NVivo. Text and all the transcripts were reviewed and coded according to the objectives. Data unit was a sentence or a short paragraph based on the meaning.

Following table provides an overview of the participants selected for the interviews. This is the total population

of the selected case study with regards to the objective of this study. The information in this summary table protects the anonymity of the participants.

Table 1. Grounded theory participants selected for the Study

#	Gender	Age	Education Level	Tenure	Position
A	Male	51-60	PhD	5-10 years	Dean
B	Male	51-60	PhD	5-10 years	Dean
C	Male	41-50	PhD	2-5 years	Head
D	Male	41-50	MSC	5-10 years	Senior Lecturer
E	Male	41-50	MSC	5-10 years	Manager
F	Male	41-50	PhD	5-10 years	Manager
G	Male	41-50	PhD	5-10 years	Dean
H	Male	41-50	MSC	2-5 years	Manager
I	Male	41-50	MSC	2-5 years	Manager
J	Female	41-50	PhD	5-10 years	Head
K	Female	41-50	PhD	5-10 years	Head
L	Male	41-50	Post-Doctoral	5-10 years	Head
M	Male	41-50	Post-Doctoral	5-10 years	Head
N	Male	41-50	MSC	5-10 years	Head
O	Female	41-51	MSC	5-10 years	Head

After the interview sessions, further amplifications regarding the interview were made through follow-up phone calls, e-mail, and second interviews as well. The first step of the data analysis was to prepare a detailed description of the selected case-based company, based on interviews and supporting documentation. Therefore, the data collected from the first round of interviews were examined thoroughly using content analysis technique and constant comparison, which comes under the grounded theory technique. Content analysis is a qualitative systematic text analysis technique, which was developed twenty years ago in relation to social science (Elo & Kyngäs, 2008). When using content analysis, the aim was to build a model to describe the phenomenon in a conceptual form. This study has merged grounded theory with the content analysis technique to acquire deep understanding within the identified context. In this study, to identify major themes (Dillon, 2012) the interviews data were cross-referenced with a properly coded mechanism. Furthermore, through the grounded theory mechanism, we tried to maintain the consistency between the variables and factors, which were identified during the interviews and literature. This technique encourages the emergence of a finding from the data set by constantly comparing incidents of codes with each other and then abstracting related codes to a higher conceptual level (Dillon, 2012).

Using the grounded theory mechanism, we examined the qualitative data thematically and ranked the identified themes by their frequency and later categorized them. The objective of the present research was to identify the factors affecting the sustainable competitive advantage.

First, open coding technique was used to identify the concepts, possible categories and related properties of the collected data. Identified concepts were organized into categories, then sub-categories were identified. Using the method of axial coding relationships were identified.

The category names were defined according to the names used by respondent's so-called indigenous terms. Further to make sense of data researcher were defined "so-called sensitizing" terms. After that, the first theoretical propositions were developed by drafting of memos. That is the point at which research insights were developed.

Once all the interview scripts were analyzed, using constant comparison method, data was reassessed and re-coded to identify the categories and properties. In each iteration, we tried to maintain the internal consistency of the structure of categories and properties, which were identified.

Once new concepts, which do not fit into the existing set of categories and properties occur then, again start questioning with additional interviews. These new interviews allowed further development and understanding of the categories, properties and their relationships.

The study was carried out several times through the data collection until the theoretical saturation point was reached. Lastly, the model grounded from the analysis was compared with the conceptual models previously reviewed in the literature, particularly the two models. The main intention of this method was to promote a final refinement of certain categories and properties because it allows maintaining the balance between learning from empirical data and existing theories without diminishing the value of an inductive approach.

Open coding is the preliminary step of the data analysis, the main idea is to collect data from a variety of sources such as interviews, documents or observations to develop categories and concepts. Those are the basic units of

the research science grounded theory not concerning on prior theories. In this step, the researcher should code all the actions and important concepts related to the research question. In another way, research tries to break down the data into first level concepts, or master headings, and second-level categories, or subheadings. This is an iterative method to derive all the codes by comparing new codes with previous ones.

The whole coding process is iterative as follows;

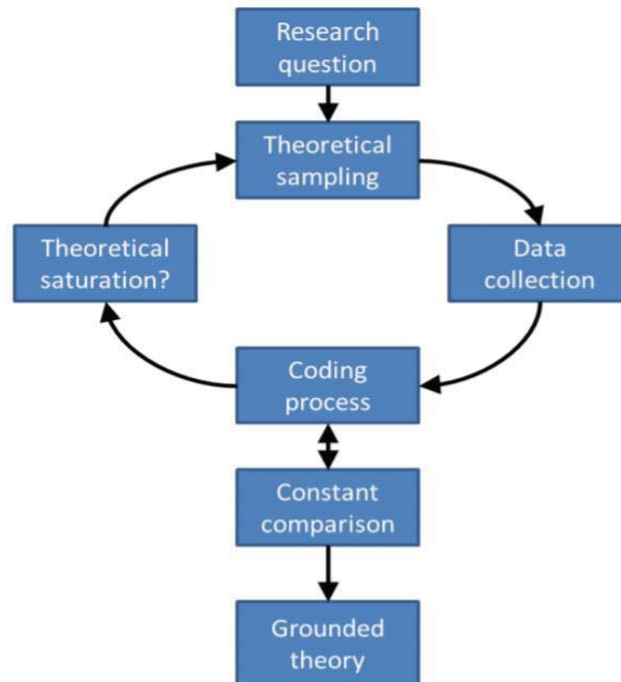


Figure 1. Grounded theory framework

Three coding types come under the coding process of the above figure.

With each interview transcript, we collected indicators such as words, phrases, statements from the data, or observations. In the following table, it provides an extensive list of the indicators collected from the 15 interviews. Open coding was able to conduct a thorough examination of the data, breaking it down into parts, making comparisons, and questioning. The indicators, then, are both identified bits of data collected and data that results from the process of breaking down the data.

Through axial coding, we were able to identify several themes as follows; this is the initial category of coding based on the proposed conceptual framework.

Factors affecting the sustainable competitive advantage in higher education.

4. Findings and Discussion

4.1 Open Coding: Factors Affecting the Sustainable Competitive Advantage in Higher Education

This is the first step according to the initial theme categorization of this research. Since this research does not base on the prior hypothesis, the study focused on the free responses provided by the participants of the interviews. For the first stage of factors affecting the sustainable competitive advantage in HEI, free responses presented as follows; this is not a one-time approach, iterative interviews were conducted to get a comprehensive idea about this topic.

Table 2. Open Coding: Factors affecting to the sustainable competitive advantage in higher education

Factors affecting the sustainable competitive advantage in higher education		
Person	Interview Script	Coding
Person A	Can achieve a sustainable competitive advantage by being better or unique in education, by maintaining a good reputation, growing customer base, by maintaining recognizable name (brand), desirable market position, market-oriented curricula, producing quality market ready students, having accreditations. Currently, our organization has UGC approval and IET accreditation. Industry participation.	Increase quality, reputation, Produce quality graduates. Accreditations.
Person B	Develop well maintained competent faculties including by recruiting top-level reputable professors who possess effective international network and rich experiential knowledge. Maintaining good rankings are necessary.	Talent management. Rankings/Indexing's
Person C	To achieve sustainable competitive advantage university should acquire attributes, such as being better or unique, good reputation, growing customer base, recognizable name, desirable market position, market-oriented curricula, producing quality market ready students, engaging competent faculties including top-level reputable professors, possessing an effective international network and rich experiential knowledge.	Increase reputation for increasing the quality.
Person D	Developing a sustainable competitive advantage requires customer loyalty, a great location, unique merchandise such as curriculum of the courses, proper distribution channels, good vendor relations, good reputation based on the customer service, and multiple sources of advantage.	Increasing the customer loyalty by maintaining a good relationship with customers.
Person E	To achieve the competitive advantage university should be able to produce highly competent and skilled graduates with experiential capability. Further, we can measure the competitive advantage by using some of the strategic frameworks such as Porter's competitive model, Resource-Based View of the Firm, Resource-Advantage (RA) theory, the Delta Model, Stakeholders Theory, and the Talent Management Model. Each respective model helps to answer some of the pertinent issues related to acquiring, gaining and maintaining a sustainable competitive advantage of the HEI.	By producing highly competent graduates to the industry. Theories can use to analyze the current status of the organization and improve the faults.
Person F	Building a good image before the society; students with appropriate preparation for the job market, performance evaluation, among others.	By improving the institute image. Produce skilled graduates.
Person G	To developing sustainable competitive advantage universities should maintain customer loyalty, a great location, proper curriculum, good reputation based on the customer service. Business intelligence can use to identify insights of the data and can use for decision making.	Customer loyalty, great location, proper curriculum. By using business intelligence.
Person H	Reputation and branding should improve in order to gain the sustainable competitive advantage.	Increase reputation and branding.
Person I	There are some theories which can use to achieve the competitive advantage such as Porter's theories of competitiveness (in the Industry and Territorial), the theory of the resources and capabilities (RBV), the Resource-Advantage (RA) theory, the Delta model, and the Stakeholders theory.	Using theories such as Porter's competitiveness and resource advantage theories.
Person J	Talent management best practices can use to recruit and retain the employees required to drive the organization's performance, and hence, success in providing quality service to students and customers.	Improve the quality of internal staff.
Person K	Carefully evaluate the challenges and threats of the environment, understanding the needs of the stakeholders, attracting and consolidating resources, facing the external changes and solving their internal problems.	Evaluate challenges and threats.
Person L	Need to carefully understand the reasons regarding why students used to select a particular university. Further, need to maintain competent faculties with top-level reputable professors. Furthermore, the institute should maintain the excellence, reputation, status etc.	Analyze the current situation and improve the quality. Recruit quality employees to the organization.
Person M	Need to improve the understanding of the new types of higher education institutes which recently appeared at the Sri Lankan market in terms of virtual universities or corporate universities. Industry interactions.	Improve the current status by comparing with competitors. Industry interactions.
Person N	Should identify the weak point of the students and provide feedback to improve them. Then they will be able competitive in the industry better. It will also lead to achieve the sustainable competitive advantage in the higher education institutes. Participation in competitions.	Improve the performance of students by identifying the weak points. Participation in competitions.
Person O	None	

List of codes derived from the analysis in relation to the sustainable competitive advantage in Higher Education Institutes are as follows;

- Maintaining good reputation
- Maintaining rankings/ indexings.
- Maintain good relationships with industries
- Student participation in competitions
- Accreditations with reputable institutions
- Growing customer base
- Improve student performance
- Maintaining recognizable name (brand)
- Desirable market position
- Market-oriented curriculum
- Producing quality market ready students
- Risk Management
- Competent faculties including top-level reputable professors.
- Good vendor relations
- Effective international network and rich experiential knowledge.
- International to domestic student ratio.
- Research productivity of the university
- No of degree programs awarded by the Institute

Identified codes summarized according to their importance as follows; Summarization has considered the number of participants who have mentioned the particular code.



Figure 3. Summary of Open Coding: Factors affecting to the sustainable competitive advantage in higher education

4.2 Axial Coding: Factors Affecting the Sustainable Competitive Advantage in Higher Education

To identify the factors affecting the sustainable competitive advantage organizations should identify the key areas that give more competitiveness. Since all the participants are decision makers of the organization, identifying factors is not a difficult task. According to the above analysis, most important elements affect the sustainable competitive advantage, as identified as.

• Maintaining good reputation	15
• Maintaining rankings/ indexings.	7
• Maintain good relationships with industries	4
• Student participation in competitions	3
• Accreditations with reputable institutions	3
• Growing customer base	11
• Improve student performance	15
• Maintaining recognizable name (brand)	15
• Desirable market position	7
• Market-oriented curriculum	13
• Producing quality market ready students	15
• Risk Management	3

• Competent faculties including top-level reputable professors.	13
• Good vendor relations	5
• Effective international network and rich experiential knowledge.	4
• International to domestic student ratio.	5
• Research productivity of the university	4
• Number of degree programs awarded by the Institute	3

This represents out of the 18 characteristics most important elements to gain the sustainable competitive advantage are maintaining a good reputation, growing customer base, improve student performance, market-oriented curriculum, produce quality market ready students and develop competent faculties with top-level reputable professors. Even though there are only a few elements are more important out of 18, all the others are also can relate to the important themes. As an example to have a good reputation higher education institutions should able to maintain good market-oriented curriculum, and quality market ready students and good performance of the students. Thus axial coding has performed to categories above elements to different themes as below;

To Maintaining Good Reputation higher education institutes should maintain all the below elements.

- Maintaining rankings/ indexings.
- Maintain good relationships with industries
- Student participation in competitions
- Accreditations with reputable institutions
- Growing customer base
- Improve student performance
- Maintaining recognizable name (brand)
- Desirable market position
- Market-oriented curriculum
- Producing quality market ready students
- Risk Management
- Competent faculties including top-level reputable professors.
- Good vendor relations
- Effective international network and rich experiential knowledge.
- International to domestic student ratio.
- Research productivity of the university
- Number of degree programs awarded by the Institute

Thus, it emphasizes even though the other category has less number of votes from the participants, those are also important to have a good reputation. In the same way, to improve student performance, it is necessary to have following subcategories;

- Maintain good relationships with industries
- Student participation in competitions
- Accreditations with reputable institutions
- Improve student performance
- Market-oriented curriculum
- Risk Management
- Competent faculties including top-level reputable professors.
- Effective international network and rich experiential knowledge.
- Research productivity of the university

Another axial code is, “maintain a recognizable brand name”. To achieve this advantage, it is necessary to have

good accreditations and maintaining student performance is highly important.

According to the above-proposed elements, it is not possible to measure factors affecting the sustainable competitive advantage for higher education institutes directly. What we can measure are the usual factors, which lead to the market success of the higher educational institutes.

4.3 Generating Themes: Identify the Competitive Factors of Higher Education

Market Profile

Several unique competencies can be identified as sources which give the sustainable competitive advantage. The main variables that strengthen the sustainable competitive advantage of higher educational institutes are the quality image of the institute or high market profile. To maintain the quality of the image, institutes should maintain the student performance and produce quality graduates to the market. If universities foster and remain in the fields in which they have a competitive advantage, organizations will recruit top students. Once institute maintains the image, the market profile will be automatically coming to a satisfied level or upper level compares to the other competitors.

Currently, most of the students with high profiles are targeting the universities with highest rankings. Institutions that generate university rankings consider, employer review, academic peer review, faculty to student ratio, citations per faculty member, proportion of faculty that are international, and proportion of students that are international, major academic awards to alumni, major academic awards to staff, Weighted count of alumni winning Nobel Prizes or Fields Medals. The research outcomes should map with students rather than the staff. In the current situation, less number of peer review dissertations have led the universities to receive low rankings compared to the international HEI market.

Core competencies

The organizational expertise and quality staff is also an important element. According to the literature, organizational expertise is a source of a method which can use to achieve competitive advantage. The primary data has also emphasized that students used select courses and institutions due to the reputation of the teaching staff. Further management training and employee training is necessary to improve the Excellency of the staff because the tacit knowledge will lead to reshape the culture of the organization and better management strategies. This importance of the supportive organizational culture has outlined in the literature also when comes to new system implementation. Because then employees will understand the importance of the customer-oriented service and helps to deployed new strategies within the organization. Always organization should have the ability to develop strong core values which leads to innovation and flexibility to maintain superior financial and organizational performance within the organization. When this situation applies to Sri Lankan organizations lacking the above concept, compared to the international organizations. Technological advancements are resistant to the employees.

Business Strategy and Innovation

The nature of the market success in higher education may change according to one institute to another. According to literature, strategies should align with the porters five forces theory which developed in 1979(Woodruff, 1997). Within educational institutes, mainly two aspects are considering; the threats of new entrants incorporate with corporate universities and virtual universities, bargaining power of students align with more educational options. Both aspects have a direct influence on the strategy and financial results of. Further differentiation offers innovative educational services, distinguishing from its direct competitors.

Above discussion emphasize that the most important aspect of sustainable competitive advantage is an organization to develop strategies which cannot imitate by others. For example, Sri Lankan universities still do not have the capability to attract enough international students due to the less attractiveness and the reputation. According to the literature, "if a university's principal objectives are to develop its international student base, it must focus principally on its architecture, reputation and innovative capability"(Lynch & Baines, 2004).

Thus, there should be a mechanism to achieve that aspect. Further, those strategies should sustainable in the long term. AA or big data in education is a one way which can achieve this advantage according to the literature.

Service Quality

To produce market-ready quality students, universities should continuously adapt the innovative curriculum align with the industry requirements. To maintain the standards, the curriculum should align with top international standards as well. The current situation is, even though the course content aligns with the standards, delivery, and marking has not properly aligned. To maintain the retention of the students and attraction, universities have

ignored the value of the marking standards. Thus this has led to increase the student's satisfaction, but to reduce the service quality.

Currently, Higher education institutions are categorized under service industry, therefore, HEI places greater prominence on student expectations and satisfaction. This has become a more significant factor in the universities which mainly focused on their budget on tuition. The rapid expansion of the universities and colleges, competition, significant increases in college education costs combined with demographic shifts in the population, has led HEI to in different point of view regarding the student satisfaction and retention. Moreover, aggressive competition led HEI to use different marketing strategies to differentiate with competitors.

According to the study of Edwell, the number of insights has recognized in the learning environment such as, transform the student into a flexible thinker, feedback collection to improve the learning effects (Srikanthan & Dalrymple, 2002). But due to the present situation, the student has become a spoon feeder rather than a self-learner. Students expect to learn everything in the classroom which is in the examination paper. Therefore this has led to lack of systematic thinking, interdependencies within the education. As a result, modules and instructions do not deliver to achieve learning gains. But the long-term outcome is student becomes more loyal by graduating with high knowledge rather than students who appear to be satisfied without complaints. Even though the higher management expecting this outcome from the college, middle management tries to survive with the short-term satisfaction of the students. Past studies consistently state that satisfied customers such as students, parents are the primary goal of higher education (DeShields, Kara, & Kaynak, 2005). But in this context, this will lead to the dissatisfaction of the long-term student satisfaction and the reputation of the organization. Thus, focusing on enhancing customer satisfaction at colleges and universities is crucial in developing customer value. Therefore this is a significant point to consider when maintaining the quality.

5. Conclusion

Understanding the factors affecting the sustainable competitive advantage is a crucial factor for any organization. However, prior research has not investigated this from the perspective of an HEI. Thus, the objective of this research was to identify the factors affecting the Sustainable competitive advantage in HEI.

When considering the research question posed at the outset of this paper, we argued that an HEI's main concern is to grow the customer base. Importantly, our investigation suggests that some HEI resources such as AA are sustainable for a longer period due to the ability to analyze and forecast the future outcomes.

Key outcomes of this research are, maintaining rankings/indexing's, maintain good relationships with industries, student participation in competitions, accreditation with by reputable institutions. Those are some of the vital factors of an HEI with regard to maintaining a sustainable competitive advantage.

Further, in this research, customer-driven approach and feedback centric approach to improving the quality was not approved in the Sri Lankan context due to the negative mindset of the students. Effective management is necessary to achieve this in HEI.

The factors that we identified in this paper have a significant impact to the HEI since they can achieve sustainable competitive advantage, by following the identified factors. Further, this gives valuable insights for the HEI management and marketing department to make decisions. As future research directions, it is necessary to test these factors using large-scale surveys and structural modeling procedures. Further, this method can relate to other service industries in the process of gaining sustainable competitive advantage

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The Impact of Tax Governance on the Governmental Corruption level in Jordan

Abed Al-Rahman Mohammad Baker¹, Mohannad Mohammad Al-Ibainy²

¹Faculty of Business, Al-Isra' University, Amman, Jordan

²Faculty of Business, Ajloun National University, Ajloun, Jordan

Correspondence: Abed Al-Rahman Mohammad Baker, Faculty of Business, Al-Isra' University, Amman, 11622, Jordan.

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Abstract

The current study aimed at identifying the impact of applying two tax governance mechanisms (i.e. direct and indirect tax control) on the financial and administrative governmental corruption levels at the income and sales tax department in Jordan in 2017. The researchers developed a questionnaire to collect data. Then, they distributed the questionnaire forms to the random sample they selected. The study's sample consists of 22 tax auditors, 8 tax supervisors, and 2 heads of the auditing departments who work at several directorates affiliated with the income and sales tax department at Jordan. The sample also includes 61 external certified auditors who were accredited by the latter department (n=93). The collected data was analyzed through the SPSS program and percentages and frequencies were calculated

It was concluded that the application of the two tax governance mechanisms (i.e. direct and indirect tax control) can significantly reduce the levels of financial and administrative governmental corruption at the income and sales tax department. It was also concluded that external auditors - who are part of the tax governance system - play a significant role in reducing such corruption levels through enforcing indirect tax control on the income and sales tax department.

Finally, the researchers recommend holding training programs to improve the efficiency of the employees working at the control departments of taxation authorities. They also recommend using advanced accounting and tax systems to raise the efficiency of the employees working at of the control department at taxation authorities.

Keywords: corruption, tax governance

1. Introduction

Corruption is a global unethical conduct that has been widely spreading in all over the world in various areas. Such areas may include: the financial, administrative, economic, social, political, judicial, and moral areas (Windssor, 2004). It is considered as a serious problem because it negatively affects all countries without exception, whether they are developing or developed. It also affects all the public and private sectors and hinders their growth

However, in the business and governmental sectors, the financial and administrative corruption are considered the worst kinds of corruption due to their major negative impacts on them and the losses resulting from them. For instance, they led to experiencing successive economic crises on the local and international levels. They also led to the collapse and bankruptcy of various international companies and banks. Hence, the researchers of the present study aimed at shedding a light on these two kinds of corruption at the income and sales tax department in Jordan.

The researchers believe that it is necessary to make reforms to fight against such corruption at the latter department. Such reforms may include enacting laws, applying useful governance mechanisms and promoting awareness among people and employees about the consequences of corruption on people and national economy. However, applying useful governance mechanisms requires investigating their role in fighting against corruption at taxation departments. Thus, the researchers aimed at shedding a light on the role of two tax governance mechanisms (i.e. direct and indirect tax control) in fighting against and detecting financial and administrative governmental corruption in the income and sales tax department at Jordan

2. Statement of the Problem

There are many countries that lack valuable resources which can generate high amounts of revenue. Therefore, such countries rely much on the tax revenues to pay their public expenditures. In other words, the collected tax revenues are considered highly significant in such countries. For instance, such revenues participate in making investments, supporting national economy and increasing the economic growth rates. Thus, they shall participate indirectly in providing job opportunities and fighting against poverty and unemployment.

In the light of the aforementioned, it should be noted that acts of manipulation or corruption related to taxes shall hinder the state's growth and development. Hence, the taxation departments must perform their role efficiently to prevent and detect any corruption related to taxes, especially in developing countries that lack valuable resources. That can be ensured through applying effective tax governance mechanisms. In order to identify the effectiveness of tax governance mechanisms, they must be examined. For this reason, the researchers of the present study aimed at examining the effectiveness of two tax governance mechanisms (i.e. the direct and indirect tax control) in fighting against financial and administrative governmental corruption at the income and sales tax department in Jordan

3. The Study's Questions

The present study aimed at answering the following questions:

Q.1) - Is there any statistically significant impact for the application of direct tax control – as being one of the tax governance mechanisms – on the levels of financial and administrative governmental corruption at the income and sales tax department in Jordan?

Q.2) - Is there any statistically significant impact for the application of indirect tax control – as being one of the tax governance mechanisms – on the levels of financial and administrative governmental corruption at the income and sales tax department in Jordan?

4. The Study's Objectives

The present study aimed at:

1) – Identifying whether there is any statistically significant impact for the application of direct tax control – as being one of the tax governance mechanisms – on the levels of financial and administrative governmental corruption at the income and sales tax department in Jordan

2)- Identifying whether there is any statistically significant impact for the application of indirect tax control – as being one of the tax governance mechanisms – on the levels of financial and administrative governmental corruption at the income and sales tax department in Jordan

5. The Study's Significance

The present study is significant due to the following reasons:

- The study's results can enhance the Jordanian national economy through providing knowledge about the significance of fighting against corruption and its reasons
- The study's results participate in raising the tax revenues which represent a significant amount of the gross domestic product. That shall lead to improve the Jordanian economy, raise the economic growth rate, reduce poverty, make investments and increase job opportunities
- The study's results are useful for the ones responsible for making policies and decisions at the income and sales tax department. To be specific, these results shall help them in fighting against corruption and reducing the tax evasion rates. Thus, these results shall improve the future performance of the latter department leading stakeholders to invest more in governmental business
- The present study fills a gap in the relevant Arab literature and provides recommendations for reducing tax related corruption. It also fills a gap in the Jordanian literature due to the scarcity of the studies conducted about this issue in Jordan
- The present study provides a review for the relevant theoretical and empirical literature related to tax governance. It also sheds a light on the seriousness of the financial and administrative corruption at governmental institutions.
- The study shall serve as a useful reference for the researchers who want to conduct similar studies in the taxation departments of other countries.

6. The Study's Limits

The present study was conducted in 2017 at the income and sales tax department in Jordan

7. Definition of Terms

Corruption: It refers to the use of public office for achieving a personal gain. In simple words, it is the employee's use for his status, rank, or official position to get a personal benefit (Myint, 2000).

Tax Governance: Abed Al-Sami' (2008) defines it as being: a group of procedures and rules applied by the tax administration to ensure the achievement of tasks properly. They are also followed to develop their processes and raise the trust of its taxpayers in it. These are also followed to achieve justice and transparency, enforce control and hold all employees accountable for their acts. That is done to achieve the goals of tax legislations and raise people's sense of trust in the tax and economic systems of the state.

8. Financial and Administrative Corruption and Their Forms

Windssor (2004) suggests that there are many types for corruption, such as the financial, administrative, economic, social, political, judicial, and moral corruption (Cited in Ensaf et al., 2012). However, the present study aimed to shed a light on the administrative and financial corruption.

Administrative corruption is defined as one's misuse of position for achieving any personal gains in an illegitimate manner. As for the financial corruption, it refers to the financial deviations and violations committed against the financial rules that govern the financial works and operations at governmental intuitions. Financial corruption also involves any act that violates the regulations of the financial control authorities (Sulaiman, 2005).

According to Mohammad (2007), administrative and financial corruption have various forms. For instance, they may be represented in bribery, nepotism, favoritism, the use of connections for personal gain, forgery, blackmail, and embezzlement. They may involve the slowing down of procedures of certain paper works

9. Reasons and Consequences of the Financial and Administrative Corruption

According to Al-Saf, (1998), the reasons behind financial and administrative corruption can include: (Cited in Ali et al., 2013)

- 1)- Personal reasons: They are represented in one's personality, characteristics, educational level and views about the concept of legitimacy.
- 2)- Social reasons: They are represented in the customs, traditions and norms that are dominant in the society, such as the spread of favoritism
- 3)- Administrative and organizational reasons: They are represented in the vagueness of regulations, the complexity of the administrative procedures and the use of ineffective control methods and systems
- 4)- Legal reasons: They are represented in the absence of laws that enforce deterrent punishments on the ones who commit acts of financial and administrative corruption
- 5)- Political reasons: They are represented in appointing managers based on their political views without taking their competency into consideration. Such reasons include the absence of institutions responsible for fighting against corruption and control. They also include the poor performance of the governmental institutions responsible for control.
- 6)- Economic reasons: They are represented in employees' low wages, incentives, and bonuses. That shall lead employees to search for any method that can increase their income even if it's illegitimate.
- 7)- Reasons related to governance: Having an inefficient governance shall threat organizations' growth, and make them incur more costs,. It shall make them lose competitiveness and face difficulties in finding solutions to their problems.

As for the consequences of those types of corruption, they may include: (Kardoudi and Wasaf, 2016):

- 1)- They shall hinder economic growth and reduce the rates of foreign and local investments. They shall also reduce the amounts of available resources which should be used for anti-poverty programs and production.
- 2) The levels of such corruption shall negatively affect the amount of tax revenues. That occur when the companies submit false financial statements to the tax authorities to pay less amount of taxes. That also occurs when the tax authority does not enforce taxes on certain people of high economic and political authority. That shall in turn affect the credibility of the tax authority and increase the tax gap.
- 3)- When the officers of the tax authority accept bribes to reduce the payable taxes and tax rates, the government

revenues shall decrease. That shall lead to raise prices, and foreign debts and experience an interference by foreign countries in making decisions.

- 4)- They shall increase governmental expenditures and lead to a poor management of resources
- 5)- They shall increase poverty rates and result in poor distribution of income. That shall increase the gap between the rich and the poor, raise the prices of governmental services and decline the living condition
- 6)- They shall negatively affect the stock exchange markets and investment funds. For instance, the false financial statement shall mislead the stakeholders when making decision leading to a stock market crash, bankruptcy and economic crises

10. Tax Governance and Its Significance

According to Al-Janabi (2009), tax governance refers to a group of procedures that organize and govern the relationships between all the tax administration officers and taxpayers. Thus, enforcing an efficient corporate governance on the tax administration would result in disclosing its works, raising their levels of transparency, achieving objectivity and holding employees responsible for the application of the applicable laws and regulations. That shall make all the concerned parties enjoy the rights entitled to them. To add more, tax governance shall protect the state's revenues, and prevent any violation made against the law. Tax governance shall also protect the rights and interests of tax payers.

11. The Strategic Objectives of Tax Governance

According to Abu Omar (2010), the comprehensive application of tax governance shall achieve tax reforms that shall serve the interests of all the parties involved in the taxation process. As for Abed Al-Men'im (2008), he believes that tax governance aims at:

- 1)-Achieving fairness and efficiency in the tax administration and its works.
- 2)-Raising people's awareness about tax related matters and instilling a sense of compliance to paying taxes willingly among taxpayers.
- 3)-Improving the electronic processing of tax declarations and data. The researchers of the current study also believe that achieving this objective shall participate in saving time and the efforts exerted by the tax administration employees. That shall lead to achieving the desired tasks in the appropriate time.
- 4)-Making improvements on tax systems in a regular manner
- 5)- Benefitting from the technological developments in performing works at the tax administration.
- 6)- Developing a special incentive system for the employees of the tax administration to encourage and motivate them.
- 7)- Having accurate statistics about the number and data of the tax population which shall prevent tax evasion and reduce the tax related disputes and lawsuits (Abed Al-Men'im, 2008, p.49).
- 7)- Improving the efficiency and competency of the employees working at the tax administration
- 8)- Improving the performance level of the tax administration to meet the total quality standards (Andreas, 2009)

12. Elements of the Tax Governance System

Hanna (2005) believes that the tax governance system consists from the following elements:

- 1)-Tax legislations: They refer to a group of laws, regulations, and systems that aim to enforce taxes, determine their value, and collect them. These laws, regulations, and systems also aim to govern the processes carried out by the tax administration and regulate the tax administration's relationships with the people it deals with.
- 2)- Tax administration: It refers to all the public directorates that are responsible for applying and enforcing the income and sales tax act through the auditors and employees. They apply and enforce this act through determining the tax values, conducting tax inspections, and communicating with the other governmental departments to ensure that taxes have been paid by the tax payers and investors.
- 3)-Tax population: It refers to the all the natural people involved in taxation process, such as: the taxpayers, and tax lawyers, consultants, accountants, and auditors. It also refers to the legal people dealing with the tax administration, such as: the public and private joint stock companies.

The researchers of the current study believe that figure (1) presents the elements of the tax governance system and the relationships between them. Identifying such relationships shall enable officials to enact a clear and comprehensible tax act that can identify the responsibilities and duties of the tax administration. Through such an

act, taxes shall be enforced in a fair manner on the tax population and the involved parties would enjoy all their rights. This act shall also settle any dispute that may arise between the members of the tax population and the tax administration.

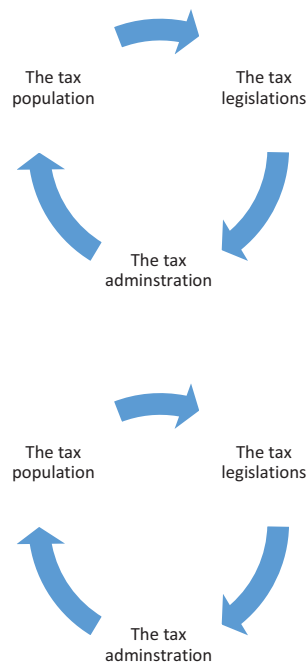


Figure 1. Elements of the tax governance system (Designed by the researchers of the current study based on the study of Hanna (2005))

13. The Tax Governance Mechanisms

Zanoni and Janssens (2005) suggests that direct control (i.e. bureaucratic control) refers to exercising power through traditional methods of direct control and ensuring employees' compliance to the rules set earlier. As for the indirect control, they state that it is based on the Foucauldian idea and define it as the control arises from one's sense of identity and operates through the self rather than being imposed on the self. They state it is the product of social relationships. In other words, it refers to regulating people's identity to make them indirectly controlled by the regulations of their own professional identify. They state the indirect control refers to the self-positioning of employees within a managerially inspired discourse about the organization and work which shall turn them into being more or less committed.

Governance adopts several mechanisms and the same applied to tax governance. However, the most significant tax governance mechanisms are represented in tax control, including the direct and indirect ones. As for the direct tax control, it includes performance control and organizational control. The organizational control refers to the extent of applying the law by the tax administration and how correct its enforcement is. As for the performance control, it is based on the following:

A)- Enforcing control over the extent of applying the rationalization principle in the activities and policies of the tax administration. That is done to ensure that they adopt the rationalization principle properly and correctly. That shall save the costs in the tax administration. Such control shall ensure the employees' compliance to the actual costs needed for providing the required quantity and quality of services (Seyam, 2009)

B)- Enforcing control over the tax administration's efficiency in using the available human and financial resources. In other words, efficiency should be connected with rationalization in the use of these available resources. Through applying the efficiency and rationalization principles, the tasks shall be achieved in a way that is consistent with each case. It shall also ensure that the tax administration is using the techniques required for handling each case in a way that suits it (Abu Omar, 2010)

C)- Enforcing control over the performance effectiveness that concerns the tax administration's tasks related to its goals. Such tasks include: collecting taxes, providing the state with sufficient tax revenues, making a census

estimation for the number of the tax population, and reducing the rates of tax evasion (Eid, 2010). Thus, this effectiveness must be achieved through identifying the tax administration's main goals in accordance with each managerial level (i.e. upper management, middle management, and line management). In addition, the tax administration must keep tracking its performance effectiveness in accordance with each managerial level. Furthermore, tasks should be identified implicitly and clearly to achieve the performance effectiveness at the tax administration (Eid, 2010)

Based on the aforementioned, promoting the application of indirect control among taxpayers is considered one of the most important tax control pillars. The researchers believe that promoting the application of this control can be done through:

- Raising the accuracy and effectiveness of the internal control: This control is represented in the administrative, and accounting control enforced by companies on themselves
- Keeping the accounting records that are issued regularly in pursuant to the international accounting standards.
- Auditing the company's accounting records by external auditors.

14. Significance of Control in fighting against Corruption

Al-Zahawi (2008) believes that control aims at: (Cited in Ensaf et al., 2012):

- 1)- Protecting public funds and ensuring employees' compliance to the law and regulations. Control also aims at checking the validity of employees' financial practices
- 2)- Detecting any deviation, error, or violation in governmental bodies and organizations
- 3)- Controlling and assessing performance in accordance with the applicable law
- 4)- Issuing opinions about the validity of the financial statements and ensuring their compliance to the accounting standards
- 5)- Auditing and controlling the accounting records of governmental organizations to make sure that laws are applied properly in relation to collecting tax and spending public expenditures
- 6)- Making sure that public officers are not misusing their powers for achieving any personal gain
- 7)- Identifying the actual financial positions of organizations and the actual investment returns

Al-Bkou' and Ahmad (2012) believe that using internal control systems shall significantly reduce the financial and administrative corruption levels in service organizations. That shall promote positivity among employees and reduce the costs of investment projects

Murad and Amin (2017) believe that internal control plays a significant role in fighting against financial corruption. They believe that such control also enables the management to take useful decisions and detect the shortcomings in its works. In addition, such control enables the management to detect financial corruption acts and identify their reasons. They also believe that the organization's lack of compliance to the laws indicate that there are shortcomings in its internal control system. They also suggest that poor internal control shall raise the rates of financial deviations and violations.

15. Empirical Literature

Majeed (2010) aimed at identifying the impact of applying internal control on the financial corruption levels in Iraq during (2006 – 2008). He developed a questionnaire and distributed the questionnaire forms to the random sample he selected. The sample consists from 90 employees working at the internal control department of the Iraqi central bank and auditors working at external audit offices. However, 80 questionnaire forms were retrieved which are valid for statistical analysis. It was concluded that the institution's lack of commitment to the law and regulations indicate that there are shortcomings in the internal control system. In addition, it was concluded that poor internal control shall increase the probabilities of committing deviations and violations which are one of the forms of the financial and administrative corruption. He also concluded that using effective taxation and accounting systems shall significantly reduce the financial corruption in Iraqi institutions.

Al-Ebaidy and Al-Samerai (2012) aimed at exploring the reasons behind committing tax evasion acts which are one of the forms of tax corruption. Their study was conducting in Iraq through examining the records of the Iraqi ministry of finance and the general commission for taxes during the period (1995 – 2010). They concluded the tax evasion rates in Iraq are high due to the poor control enforced on companies and individuals which lead to reducing the investment rates.

Ali et al. (2013) aimed at identifying the impact of applying corporate governance mechanisms and rules on the strategic performance of the general commission for taxes at Iraq. The latter researchers developed a questionnaire. After that, they distributed the questionnaire forms to the sample. The sample consists from the heads of departments and officials who were working at the general commission for taxes (GCT) and academics who are specialized in accounting, auditing and management. The sample also includes professionals working in audit offices and officials working in the state financial control bureau. 93 questionnaire forms were distributed, but 86 were retrieved and all of them are considered valid for statistical analysis. They concluded that the application of the corporate governance mechanisms is highly significant due to their positive impact on the taxation system and the fulfillment of the commission's strategic performance. They also concluded that such application shall fulfill the political, social and economic goals of the state's taxation policy. They also concluded that such application shall reduce tax evasion, and tax gap rates and encourage the commission's employees to follow the regulations and rules

Zaher et al. (2014) aimed at investigating the impact of implementing corporate governance mechanisms on the financial and administrative corruption levels in the Syrian private banks in 2013. They distributed questionnaire forms the sample they selected. Their sample consists from 73 board members, financial managers and executive managers who work at Syrian banks. However, 66 questionnaire forms were retrieved. It was concluded implementing corporate governance mechanisms shall reduce the financial and administrative corruption levels in the Syrian private banks. They also concluded that there is a negative correlation between the latter levels and the application of internal control

Abu Odeh (2015) aimed at identifying the impact of corporate governance and corruption on tax revenues in Palestine during the years (1996 – 2013). The latter researcher collected data from the reports published by the Palestinian ministry of finance World Bank and developed a model for measurement. She also conducted the simple regression analysis. She concluded that there is a significant positive correlation between tax revenues and corporate governance. It was also concluded that there is a negative correlation between corruption and tax revenues. It was also concluded that poor levels of disclosure and transparency shall increase the tax evasion rates

16. The Study's Approach

The present study adopts the analytical descriptive approach.

17. The Study's Variables

*The independent variable: The application of two tax governance mechanisms (i.e. direct and indirect tax control)

*The dependent variable: The financial and administrative governmental corruption levels at the income and sales tax department in Jordan

18. The Data Collection Methods

The researchers used two kinds of data which are represented in the following:

- 1)- Primary data: It is represented in the data collected through the questionnaire forms
- 2)- Secondary data: It is represented in the data collected from books, studies, articles, theses and PhD dissertations

19. The Study's Instrument

After reviewing the aforementioned empirical literature, the researchers developed a questionnaire to collect data from the sample. This questionnaire consists from two parts. The first part aims to collect demographic data about the sample, such as: their positions, academic qualifications and years of experience. As for the second part, it consists of(43) statements. 27 statements aim to provide an answer to the study's first question, whereas 16 statements aim to provide an answer for the study's second questions.

20. Statistical Methods

The researchers of the present study used the SPSS¹ program and descriptive statistical methods to analyze the collected data. Through this program, percentages and frequencies were calculated and presented in tables. They were calculated to describe the respondents' characteristics and attitudes.

The researchers used the following criterion to classify percentages:

¹Statistical Package for the Social Sciences (SPSS)

- 1)- 100 % – 65 %: High
- 2)- 64 % - 50 %: Moderate
- 3)- 50 % – 0 %: Low

21. The Instrument's Validity

The questionnaire was passed to five experts who are university professors specialized in management. They were asked to provide their opinions and make modifications. That was done to make sure that it is able to measure what it was set to measure. In the light of their comments, some changes were made.

22. The Instrument's Reliability

In order to measure the instrument's reliability, the researchers calculated the Cronbach's alpha coefficient. The results show that it is 0.91 which is a high value because it far exceeds 0.60. That means that the instrument is highly reliable and provides accurate results.

23. The Study's Population and Sample

The study's population consists from 124 tax auditors, supervisors and heads of departments who work at the directorates affiliated with the income and sales tax department at Jordan. The population also consists from (384) external auditors accredited by the latter department. Such information was obtained from a circular issued by the income and sales tax department. As for the sample, it was selected randomly and it represents 30 % of the whole population. Thus, one hundred and fifty four (154) questionnaire forms were distributed to the study's sample. However, ninety three (93) questionnaire forms were retrieved and all of them are considered valid for statistical analysis. As for the response rate, it is 83.78 %.

Thus, the sample consists from 22 tax auditors, 8 tax supervisors, and 2 heads of the auditing departments who work at several directorates affiliated with the income and sales tax department at Jordan. It also includes 61 external certified auditors who were accredited by the latter department (n=93). Further details are presented in table (1)

24. The Sample's Characteristics

The respondents' characteristics were collected through the first part of the questionnaire. Such characteristics concern their positions, academic qualifications and years of experience.

24.1 The respondents' Distribution According to Their Positions

The respondents are classified into the following categories according to their positions: (tax auditors, tax supervisors, heads of auditing departments, and certified auditors). To be specific, the sample consists of 22 tax auditors, 8 tax supervisors, 2 heads of the auditing departments, and 61 certified external auditors. The percentage of certified auditors is the highest (i.e.68.75 %). As for the lowest percentage, it is the heads of the auditing departments (i.e. 6.25 %). Further details are presented in table (2)

24.2 The Respondents' Distribution According to Their Academic Qualifications

The qualifications that the respondents hold include the (BA, MA, and PhD) degrees. It can be noticed that (78.125 %) of the tax auditors hold a BA degree. In addition, 88.52 % of the external auditors hold a BA degree. It is noticed that 18.75 % of the tax auditors hold an MA degree, whereas 8.2 % of the external auditors hold an MA degree. It can be also noticed that 3.125 % of the tax auditors hold a PhD degree, whereas 3.28 % of the external auditors hold a PhD degree. It can be clear that most of the sampled external auditors and tax audits hold a BA degree because their professions require having a practical experience rather than holding postgraduate degrees. Further details are presented in table (3)

24.3 The Respondents' Distribution According to Their Years of Experience

The respondents are classified into five categories according to the years of experience they possess. However, it can be noticed that twenty one (34.4 %) of the external auditors possess more than twenty (20) years of experience It is also noticed that twelve (12) respondents of the tax auditors group possess an experience of 6 – 10 years which represents 37.5 % of the tax auditors group. As for the other categories, they possess less experience. It is noticed that the numbers of tax auditors decrease with the increase of their experience after having more than 10 years of experience. It can be also noticed that the number of the external auditors increase with the increase of their years of experience. Further details are presented in table (4).

25. Results

25.1 Results Related to the Study's First Question

Q.1) - Is there any statistically significant impact for the application of direct tax control – as being one of the tax governance mechanisms – on the levels of financial and administrative governmental corruption at the income and sales tax department in Jordan?

The percentages listed in table (5) aim at providing an answer for the study's first question

Based on statement (11), it can be concluded that 97.8 % of the respondents believe that work tasks must be distributed well to reduce the levels of administrative negligence. In addition, statement (10) indicates that 95.7 % believe that having a valid organizational plan for managing the tax payers' files shall reduce the operational costs of the income and sales tax department. These percentages are the highest percentages in table (5). The percentages listed in table (5) are high because they are within the range of 64.5% - 97.8 %. The total percentage is (85.5 %) which is a very high value. It indicates that respondents believe that direct tax control can significantly reduce the levels of financial and administrative governmental corruptions at the income and sales tax department in Jordan.

25.2 Results Related to the Study's Second Question

Q.2) - Is there any statistically significant impact for the application of indirect tax control – as being one of the tax governance mechanisms – on the levels of financial and administrative governmental corruption at the income and sales tax department in Jordan?

The percentages listed in table (6) provide an answer for the study's second question

According to statement (24), 96.8 % of the respondents believe that editing the facility's records by external auditors shall reduce the financial and administrative governmental corruption levels. As for statement (21), 94.6 % of the respondents believe that providing the department with valid documents, and records shall reduce the financial and administrative governmental corruption levels at the latter department. Statement (23) indicates that 94.6 % of the respondents believe that preparing the financial statements' in accordance with the international accounting standards shall reduce the financial and administrative governmental corruption levels at the income and sales tax department. As for the overall percentage, it is 80.9 which is a very high value. That means that respondents believe that indirect tax control can significantly reduce the levels of financial and administrative governmental corruption at the income and sales tax department

26. Conclusion

The researchers of the present study concluded the following:

1. Direct control – as being one of the tax governance mechanisms – can significantly reduce the levels of financial and administrative governmental corruption at the income and sales tax department
2. Indirect tax control – as being one of the tax governance mechanisms – can significantly reduce the levels of financial and administrative governmental corruption at the income and sales tax department
3. Enforcing efficient (direct and indirect) tax control – through procedures, regulations and follow ups- can significantly reduce the possibilities of committing acts of governmental corruption at the income and sales tax department
4. External auditors- who are part of the tax governance system - play a significant role in reducing the corruption level through enforcing indirect tax control at the income and sales tax department

27. Recommendations

In the light of the aforementioned results, the researchers of the present study recommend:

1. Holding more training programs to improve the efficiency of the employees working at the control department at taxation authorities
2. Using advanced accounting and tax systems to raise the efficiency of the employees working at of the control department at taxation authorities
3. Improving the organizational structure of the control enforced in the income and sales tax department in Jordan
4. Promoting awareness among people about tax related matters and the consequence of corruption on people and the national economy. That can be done through using modern communication channels, such as: social media channels

5. Exerting efforts to improve the living conditions of the tax administration's employees through making changes constantly on their wages and incentives in a way that is consistent with the changing inflation rates. Doing that shall participate in reducing the corruption level in the administration.
6. Identifying the procedures that should be followed to conduct a tax inspection for the taxpayers' accounting records and financial statements through providing clear and comprehensible regulations.
7. Simplifying the registration and cancellation procedures adopted by the income and sales tax department through opening centers for providing the taxpayers with tax related services.
8. Conducting similar studies in the tax administrations of other countries. The researchers also recommend investigating the impact of other governance mechanisms on the corruption level at the income and sales tax department in Jordan

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Appendices

Appendix A. Characteristics of the Sample

Table 1. The distributed and retrieved questionnaire forms

No.	Group	The number of the distributed questionnaire forms	The number of the retrieved questionnaire forms	Response Rate
1	The tax auditors group	38	32	84.2 %
2	The external auditors group	116	61	52.5 %

Table 2. The respondent's distribution according to their positions

Position	Tax auditors		Tax supervisors		Heads of the auditing departments		Certified auditors		Total	
	F	P %	F	P %	F	P %	F	P %	F	P %
The tax auditors group	22	68.75	8	25	2	6.25	-	-	32	100
The external auditors group	-	-	-	-	-	-	61	100	61	100

*F refers to frequency and P refers to percentage %

Table 3. The respondent's distribution according to their academic qualifications

Academic qualification	BA		MA		PhD		Total	
	F	P %	F	P %	F	P %	F	P %
The tax auditors group	25	78.125	6	18.75	1	3.125	32	100
The external auditors group	54	88.52	5	8.2	2	3.28	61	100

*F refers to frequency and P refers to percentage %

Table 4. The respondent's distribution according to their years of experience

Years of experience	Less than 5 years		6 – 10 years		10 – 15 years		16 – 20 years		More than 20 years		Total	
	F	P %	F	P %	F	P %	F	P %	F	P %	F	P %
The tax auditors group	6	18.75	12	37.5	6	18.75	5	15.625	3	9.375	32	100
The external auditors group	-	-	11	18	12	19.7	17	27.9	21	34.4	61	100

*F refers to frequency and P refers to percentage %

Appendix B: Attitudes of the respondents towards the statements of the questionnaire in the form of percentages and frequencies

Table 5. Attitudes of the respondents towards the statements related to the study's first question

No.	Statement	Frequency (Yes)	Percentage %	Frequency (No)	Percentage %
1	There must be efforts exerted to involve auditors in enacting tax related laws and developing tax related legislations. That shall reduce the levels of financial and administrative governmental corruption at the income and sales tax department	87	93.5	6	6.5
2	Incentives must be given to the employees working at the income and sales tax department. That shall motivate them and reduce the levels of financial and administrative governmental corruption at the income and sales tax department	78	83.9	15	16.1
3	The insufficiency of the tax auditors shall have a direct impact on the rates of abusing power at the income and sales tax department	60	64.5	33	35.5
4	Having clear tax legislations shall reduce the rates of committing manipulative acts by taxpayers. Such acts may include: offering bribes, using connections for personal gain and etc.....	88	94.6	5	5.4
5	Having a comprehensive and flexible tax system shall reduce the rates of committing errors and acts of cheating and fraud at the income and sales tax department	75	80.6	18	19.4
6	The principle of legal accountability must be enforced upon taxpayers in case of commitment any act of tax evasion. That shall reduce the levels of financial and administrative governmental corruption at the income and sales tax department	68	73.1	25	26.9
7	Having a general framework that govern the way procedures are carried out in the tax department shall encourage employees and the ones who deal with it to implement the administrative policies that are applicable in the department	77	82.8	16	17.2
8	Obliging all the employees of the income and sales tax department to issue a financial disclosure statement shall reduce the levels of financial corruption at the latter department	63	67.7	30	32.3
9	Enforcing an efficient control over the sources of the information provided to the income and sales tax department shall reduce the rates of committing acts of forgery in the taxpayers data	80	86.0	13	14.0
10	Having a valid organizational plan for managing the taxpayers' files shall reduce the operational costs paid by the income and sales tax department	89	95.7	4	4.3
11	Work tasks must be distributed well to reduce the levels of administrative negligence	91	97.8	2	2.2
12	Appointing qualified employees in the right position in the income and sales tax shall reduce the levels of financial and administrative governmental corruption at the latter department	88	94.6	5	5.4
13	Assessing the performance level of the auditors working at the income and sales tax constantly shall reduce the rates of committing acts of nepotism	79	84.9	14	15.1
14	Setting a code of ethics and professional conduct for the auditors working at the income and sales tax shall reduce the rates of committing acts of embezzlement	80	86.0	13	14.0
15	Having adequate data about the rights and duties of the auditors working at the income and sales tax department shall reduce the rates of the accepted bribes	86	92.5	7	7.5
16	Identifying the responsibilities of each administrative level in the income and sales tax department shall reduce the rates of the accepted bribes	83	89.2	10	10.8
	Total		85.5		14.5

Table 6. Attitudes of the respondents towards the statements related to the study's second question

No.	Statement	Frequency (Yes)	Percentage %	Frequency (No)	Percentage %
17	Promoting awareness among taxpayers about tax related matters through all the possible means shall reduce the financial and administrative governmental corruption levels at the income and sales tax department	77	82.8	16	17.2
18	Holding courses that aim at raising taxpayers' awareness about their rights and duties shall reduce the rates of accepted bribes at the income and sales tax department	85	91.4	8	8.6
19	Taxpayers should notify officers at the income and sales tax department about the time in which they should start performing their tasks. That shall reduce the financial and administrative governmental corruption levels at the income and sales tax department	50	53.8	43	46.2
20	Submitting the required tax declarations to the income and sales tax department on the due time shall reduce the financial and administrative governmental corruption levels at the latter department	87	93.5	6	6.5
21	Providing the income and sales tax department with valid documents, and records shall reduce the financial and administrative governmental corruption levels at the latter department	88	94.6	5	5.4
22	Paying the payable taxes by the taxpayers on the due time shall reduce the financial and administrative governmental corruption levels at the income and sales tax department	67	72.0	26	28.0
23	Preparing the financial statements in accordance with the international accounting standards shall reduce the financial and administrative governmental corruption levels at the income and sales tax department	88	94.6	5	5.4
24	Editing the facility's records by external auditors shall reduce the financial and administrative governmental corruption levels	90	96.8	3	3.2
25	Keeping the taxpayers' financial and accounting records that are issued regularly shall reduce the financial and administrative governmental corruption levels at the income and sales tax department	75	80.6	18	19.4
26	Having a valid accounting and tax systems approved by the income and sales tax department shall reduce the financial and administrative governmental corruption levels at the latter department	40	43.0	53	57.0
27	Promoting awareness among the taxpayers about the income and sales tax act shall make them comply with it and stop seeking connections for achieving personal gains	81	87.1	12	12.9
	Total		80.9		19.1

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Adoption of Human Resource Information Systems in Developing Countries: An Empirical Study

G. M. Azmal Ali Quaosar^{1,2}

¹Center for Modern Information Management, School of Management, Huazhong University of Science and Technology, Wuhan, Hubei 430074, P. R. China

²Department of Management Studies, Comilla University, Comilla-3506, Bangladesh

Correspondence: G. M. Azmal Ali Quaosar, Center for Modern Information Management, School of Management, Huazhong University of Science and Technology, Wuhan, Hubei 430074, P. R. China; Department of Management Studies, Comilla University, Comilla-3506, Bangladesh.

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Abstract

There is an inadequate understanding of the successful use and effects of a human resource information system (HRIS) in a developing country context. Given this backdrop, this study plans to explore the determinants impact on HRIS adoption in a developing country. A research model was developed after studying the existing literature, and a questionnaire was developed accordingly to collect data through a purposive sampling method.

Materials and Methods: To assess adoption of human resource information system, this study applied the Unified Theory of Acceptance and Use of Technology (UTAUT). Data were collected from HR executives and HR professionals of different private and public organizations situated in Dhaka (capital of Bangladesh) and Chittagong (commercial capital of Bangladesh), Bangladesh. To analyze the data, researcher applied partial least square method based on structural equation modeling.

Results: The study found that the research factors performance expectancy, effort expectancy, social influence, facilitating condition as well as the extended factors of UTAUT model employee involvement and training support ($p < 0.05$) had a weighty influence on HRIS adoption.

Conclusions: The findings of this study may become beneficial for the human resource department of various organizations (public, private and others) of developing countries like Bangladesh by adopting HRIS.

Keywords: human resource information systems, developing country, adoption, structural equation modeling, UTAUT, Bangladesh

1. Introduction

Over the last two decades, organizations have faced a good number of changes due to the globalization, rapid advancement of technology, the advent of a knowledge-based economy, competition and for other factors. As a result, human resource activities are also changing rapidly to keep with the organizational changes (Park, Gardner, & Wright, 2004). Thus traditional HR system that previously practiced becomes absolute and insufficient with the passage of time (Beckers & Bsat, 2002). HR with IT is the two-part and parcels that many organizations are learning to utilize as strategic weapons to stand against (Jenkins & Lloyd, 1985). Again to cope with modern changes IT based HR can lead the human resource management in the new era (Lin, 1997). HRIS can be defined as a system that is used to obtain, store, manipulate, recuperate and deliver pertinent information about the organizational human resources (Thite, Kavanagh, & Johnson, 2012).

Human resources of an organization are treated as strategic assets to achieve its sustainable competitive advantages over rivals. In human resources (HR) processes and practices, Information Technology (IT) has had a substantial effect (Stone, Dadrack, Lukaszewski, & Johnson, 2015). Previously, first responses and access to information are the ultimate objectives of the implementation of HRIS (Ngai & Wat, 2006). So, information sensitive organization intended to apply it more than others. But the application of HRIS becomes so vast and popular that now irrespective size, age, ownership status, and geographical location all organizations are trying to adapt HRIS to utilize its benefits. Appropriate HR reports and HR related data are essential to take the right decision related to management functions (Tripathi, 2011). HR data maintenance is bestowing organization to

adopt Human Resource Information Systems.

From the early of 1945, organizations realized the significance of human resources. Although no mentionable changes observed till 1960, that pave the way for an explosion in 1960 in the field of HRIS (Kavanagh, Gueutal, & Tannenbaum, 1990; Lederer, 1984). HRIS is now not only limited in administrative purposes but also significant for business and strategic purposes (Broderick & Boudreau, 1992; Kossek, Young, Gash, & Nichol, 1994; Kovach, Hughes, Fagan, & Maggitti, 2002). In the global age, organizations and the working environments of organizations have become incrementally intricate. Managers of such kind of organizations are facing difficulties to cope with the workforces that spread across from various region even countries, cultures, and also political systems. In this situations, manual HR management systems are entirely insufficient (Beckers & Bsat, 2002).

Benefits also drew attention to the organizations of Asia. Bangladesh is not lagging behind to utilize the benefits of HRIS. Organizations of Bangladesh are trying to adapt HRIS practices in their organization to derive benefits. The government of Bangladesh also shows their concern in information system. Emphasis on ICT to confirm transparency and good governance in public sector was one of the important agenda in the last 7th five-year plan¹ of Bangladesh. Organizations of Bangladesh have started to apply the information technology in various operations and sectors from the last decades with the apparition of globalization and digitalization. Only the large-scale corporate organizations are using HRIS for last five years and still limited due to their financial strength. Financial support is the first obstacle to implement IT (Ngai & Wat, 2006). The purposes of using HRIS in both manufacturing and service-based organizations in Bangladesh are almost same (Bhuiyan & Rahman, 2014).

Successful implementation is must in getting the maximum output from HRIS, and the successes of HRIS implementation needs through planning and proper monitoring (Sandeep K. Krishnan & Manjaci Singh, 2007). However, it's a challenging issue in IT/IS research to make the people understand, why they accept or reject information technology (Al-Adawi, Yousafzai, & Pallister, 2005). Companies are very disconcerted about the automated process, and its translation in HRIS leads to increase the expenses and trouble in implementing the system but like the customized packages (S. K. Krishnan & M. Singh, 2007). High installation cost and maintaining are heavier challenges in the successful execution of HRIS (Beckers & Bsat, 2002). Organizational culture shows up collective beliefs as well as values of the people employed (Schneider, Ehrhart, & Macey, 2013). People's perceptions of technological changes should not underestimate. A favorable attitude towards innovations and ideas is significant to the seamless implementation of a new system (West & Berman, 2001).

Substantial numbers of research work have been done in last two decades on HRIS in developed countries. However, very limited literature have found in developing countries under South Asian region. Some researchers have focused more on usages, for example, research of (Ball, 2001; Bamel, Bamel, Sahay, & Thite, 2014; Hussain, Wallace, & Cornelius, 2007; Kassim, Ramayah, & Kurnia, 2012; Maier, Laumer, Eckhardt, & Weitzel, 2013), etc. Some authors concentrate on the conditions for successful implementation of HRIS (Haines & Petit, 1997; Winkler, König, & Kleinmann, 2013). Again, HRIS implementation based on areas also addressed by other authors like (Ngai & Wat, 2006; Razali & Vrontis, 2010; Tansley & Newell, 2007; Teo, Lim, & Fedric, 2007).

Authors agreed upon that there is a paucity of research on HRIS in developing countries and the factors that are involved in HRIS adoption. Studies using adoption perspective attempt to evaluate the features of an organization that makes it receptive to change for technologies or innovations. This study attempts to use the Unified theory of acceptance and use of technology (UTAUT) model to investigate the influencing factors associated with HRIS adoption and to identify to what extent those factors affect the HRIS adoption in an organization.

2. Research Model and Hypotheses Development

This research is grounded in an extended UTAUT model to determine and interpret the impacts of factors that are influencing the adoption of HRIS. Venkatesh, Morris, Davis, and Davis (2003), scrutinized eight prominent models and incorporated the components of these different models into a single model. The model is more relevant in predicting the outcomes than any other models due to the logical proposition of existing theoretical models and higher comprehensiveness. The scrutinized models were Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), Motivational Model (MM), combined TAM and TPB, Model of PC Utilization (MPTU), Social Cognitive Theory (SCT) and Innovation Diffusion Theory

¹7th Five year plan covers financial year 2015 to financial year 2020

(IDT). The motive of the UTAUT model is to gain the unified view of user acceptance (Venkatesh et al., 2003) and this model can explain 70% of the variance in usage intention as well as can explain 50% of actual use (Raaij & Scheepers, 2008; Venkatesh et al., 2003).

UTAUT model is consists of four key constructs (i. performance expectancy, ii. effort expectancy, iii. social influence and iv. facilitating conditions) that act as the determinants of behavioral intentions and use behavior. In this study, the model is extended with employee involvement and training support. The HRIS itself is an emerging issue, particularly in Bangladesh context. Among other issues, employee involvement has been identified as a primary concern which can influence the adoption and use of HRIS (Green, 2012; Schraeder, Swamidass, & Morrison, 2006). Training on the system to employees also necessary to be satisfied with the system and its usage to a greater extent (Cheney, Mann, & Amoroso, 1986). Extended UTAUT model of the study given:

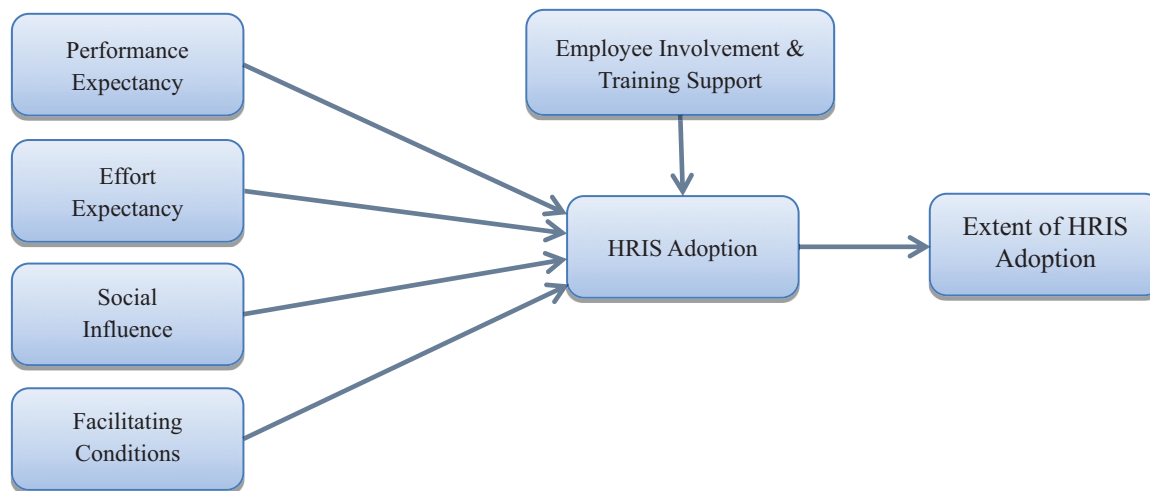


Figure 1. Research Model (Extended UTAUT model of the study)

2.1 Performance Expectancy

Performance expectancy of UTAUT model has been found as one of the most significant determinants to explain behavioral intention. It is defined as “the degree to which an individual believes that using the system will help him or her to attain gains in job performance” (Venkatesh et al., 2003, p. 447). The construct performance expectancy is derived from perceived usefulness (TAM/TAM2), extrinsic motivates (MM), result expectations (SCT), relative advantage (IDT), and job-fit (MPCU). The construct performance expectancy has the explanatory power regarding the intention to use technology as well HRIS adoption (Bandyopadhyay & Fraccastoro, 2007). To delve the impact of the performance expectancy relevant hypothesis is:

Hypothesis 1: Performance expectancy will have a positive impact on HRIS adoption.

2.2 Effort Expectancy

The construct effort expectancy is defined as “the degree of ease associated with the use of the system” (Venkatesh et al., 2003, p. 450). It is formulated from three different constructs: perceived ease of use (TAM/TAM2), ease of use (IDT), and complexity (MPCU). Effort expectancy of UTAUT model is an important predictor of the purpose to use technology. It is predicted from the features of the technology, such as social presence, proximity, and concurrency along with individual as well as group characteristics, such as technology experience, computer self-efficacy, and familiarity with others (Brown, Dennis, & Venkatesh, 2010). According to Aggelidis and Chatzoglou (2009), effort expectancy is an important determinant of users’ intention to use IT. Based on the above arguments, the following hypothesis is thus postulated:

Hypothesis 2: Effort expectancy will have positive impact on HRIS adoption.

2.3 Social Influence

The construct social influence is defined as “the degree to which an individual perceives that important others believe he or she should use the new system” (Venkatesh et al., 2003, p. 451). It is derived from three others constructs: subjective norm (TRA, TAM2, TPB/DTPB and C-TAM-TPB), image (IDT) and social factors in MPCU. The intention of people to use new technology usually influenced by the thoughts and perceptions of his/her immediate environment. For what, this construct is more significant when the users are less involve with

the technology (Venkatesh & Davis, 2000; Venkatesh et al., 2003). Lu, Yao, and Yu (2005), indicated that this construct has a significant influence on behavioral intention at the early stage of technology adoption. From above explanation the following hypothesis can be drawn:

Hypothesis 3: Social influence will have positive impact on HRIS adoption.

2.4 Facilitating Conditions

Facilitating conditions is another antecedent of behavioral intention. Venkatesh et al. (2003, p. 453), defined facilitating conditions as “the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system.” It is driven from perceived behavioral control (TPB, C-TAM-TPB), facilitating conditions (MPCU), and compatibility (IDT). Venkatesh et al. (2003), noted that facilitating conditions would be measured directly with actual usage rather than behavioral intention, as it has a direct effect on the usage.

Yia, Jackson, Park, and Probst (2006), also indicated facilitating conditions as a direct construct of use technology. When trying with something new, people usually seek for assistance, especially when it comes to technology innovation. If the facilitating conditions are not sufficient, they may act as an inhibitor (Venkatesh, James Y. L. Thong, Frank K. Y. Chan, Paul Jen-Hwa Hu, & Brown, 2011). In this study, facilitating conditions will represent the supports that employees expect in an organization to adopt HRIS. Accordingly, the following hypothesis is posited:

Hypothesis 4: Facilitating conditions will have positive impact on HRIS adoption.

2.5 HRIS Adoption

Pickett et al. (2012), described behavioral intention as “functions of both attitudes and subjective norms about the target behavior, predicting actual behavior”. UTAUT argued and proved that behavior intention has a direct positive influence on technology adoption (Venkatesh, Thong, & Xu, 2012; Venkatesh & Zhang, 2010). Thong (1999), has talked about the extent of adoption among small firms but the operationalization of extent has been regarding number of system and software applications adopted across the organization. Similarly, the definition of extent of HRIS use is missing in most current ones (Kassim et al., 2012), where the study considers HRIS as an innovation and intend to observe the impact of HRIS on the extent of its use. Jasperson and Zmud. (2005), defined post-adoptive behavior as an amalgamation of feature adoption decisions, feature use behavior, and feature extension behavior made by an individual after an IT application has been fixed and successfully exploited. The researchers have drawn various prominent research models on technology acceptance and use. These models supported the relationship between the HRIS adoption and extent of HRIS adoption. Thus, we proposed the following hypothesis.

Hypothesis 5: HRIS adoption and its impact have a positive influence on extent of HRIS adoption.

2.6 Employee Involvement & Training Support

Employee involvement in information systems development will ensure both system usage and employees' satisfaction with the system (Baroudi, Olson, & Ives, 1986). Attitude to new ideas or innovations is significant to the execution of the new system. Information system execution might be restrained due to the lower trust and communication groups as well as staffs involvement (Kimberley & Hartel, 2008). Project performance is significantly related to the known certainty and frequency of user involvement (Gales & Mansour-Cole, 1995). If the employees were involved from the decisions related to technological changes would respond more positively in the adoption that particular technology than the employees with a low level of involvement (Schraeder et al., 2006). Users' training is essential in the adoption of HRIS. In most cases, HRIS features are not entirely utilized due to the lack of skill, lack of computer awareness or the difficulty in using the systems. Employees who have received more training on HRIS are awaited to be more pleased with the system and appliance it in greater extent (Cheney et al., 1986). The following hypothesis is thus postulated:

Hypothesis 6: Employee Involvement and Training support will have positive impact on individual behavior of using HRIS.

3. Research Methodology

The conceptual model of the study and hypotheses were presented in the previous part of the study. This part is planned to set out the research methodology to get answers of the research questions. Sekaran and Bougie (2010), defined research methodology as “structured set of guidelines or activities to assist in generating valid and reliable research results”. The questionnaire of the study was developed and pretested with the faculty members of Comilla University, University of Dhaka and also with the help of HR executives and HR professionals of

various organizations. Feedback was obtained on wording, sequence, structure and overall presentation of items.

HR executives and HR professionals of different private and public organizations situated in Dhaka (capital of Bangladesh) and Chittagong (commercial capital of Bangladesh), Bangladesh are considered as the target population for the study. Researcher desired to choose selective people within the population for a study or research project, purposive sampling technique is appropriate, and we used it to the study. Purposive sampling helps to find the people with particular characteristics who will be able to cooperate with the relevant research (Kothari, 2004). A matter of caution in this regard was that the findings from this type of sampling might not be lead to actual decision making.

Due to dynamic nature of the job, the employees of these companies were mostly familiar with IT products. HR professionals were the primary participants in this study. All potential respondents were emailed the soft version of the questionnaire, and three weeks after the first mailing, another round of mailing was carried to firms who have not responded. In total, 240 questionnaires were collected from 270. Ten (10) questionnaires were incomplete and excluded from the analysis. All variables were measured using Likert scale continuum ranging from 1 (stands for strongly disagree) to 5 (stands for strongly agree). Items of the survey were developed after an extensive survey of literature.

The structural equation modeling (SEM) was used to assess the relationship among the hypothesized concepts and validating the conceptual research model. According to, Oliver Götz, Kerstin Liehr-Gobbers, and Manfred Krafft (2010), SEM is a widely established model to validate theory with empirical data. Initially, Microsoft Excel was used to shape the raw data from questionnaire and imported to SmartPLS software, one of the mostly used statistical software for analyzing data (Hair Jr, Hult, Ringle, & Sarstedt, 2016).

4. Result

4.1 The Measurement Model

The reliability and validity should be evaluated before testing the hypothesis (Bagozzi, Yi, & Phillips, 1991). The reliability was assessed by using Cronbach's alpha and composite reliability. The composite reliability and Cronbach's alpha values of 0.70 or more are acceptable. According to Hair Jr et al. (2016), the composite reliability and Cronbach's alpha values below 0.60 indicate a lack of internal reliability. The composite reliability values and cronbach's alpha of all construct in *Table 1* is more than 0.80, which is higher than the recommended value. So, the constructs were deemed to have adequate reliability. The validity was weighed by considering convergent and discriminant validity. The convergent validity is taken to be satisfactory if the measurement constructs have at 0.50 as an average variance extracted (AVE) (Hair Jr, Anderson, Tatham, & William, 1995). The measurement model table shows that AVE ranged from 0.698 to 0.829 are greater than the recommended value. Therefore, conditions for convergent validity were met. The discriminant validity was assessed by the square root of the AVE and cross loading matrix. The square root of the AVE of a construct must be larger than its correlation with other constructs for satisfactory discriminant validity (Henseler, Ringle, & Sinkovics, 2009). The square roots of AVE, shown in the *Table 2*, were greater than their corresponding correlation, representing that our data had good discriminant validity.

Table 1. The measurement Model and Crossloading Matrix

Construct	AVE	Composite Reliability	Cronbach's Alpha
HRIS	0.771	0.910	0.851
PE	0.829	0.935	0.896
EE	0.796	0.921	0.872
SI	0.822	0.933	0.892
FC	0.728	0.931	0.907
EITS	0.698	0.873	0.837

Table 2. Correlation Matrix and Square Root of the Average Variance Extracted

	HRIS	PE	EE	SI	FC	EITS	EHRIS
HRIS	0.878						
PE	0.398	0.910					
EE	0.374	0.435	0.892				
SI	0.245	0.435	0.426	0.802			
FC	-0.357	-0.487	-0.337	0.211	0.907		
EITS	0.504	0.577	0.454	0.320	-0.581	0.853	
EHRIS	0.287	0.477	0.340	0.455	-0.348	0.499	0.835

4.2 Structural Model

To discover the path relationships within the constructs a structural research model was constructed and to test

the hypothesis researcher used the bootstrap method. The study tests the association between endogenous and exogenous by path coefficient (β) and t-statistics. The study observed that PE ($t=4.654$, $\beta=0.35$), EE ($t=5.304$, $\beta=0.39$), SI ($t=3.765$, $\beta=0.36$), FC ($t=2.870$, $\beta=0.27$) and employee involvement and training support ($t=4.735$, $\beta=0.36$) had a significant effect on HRIS adoption use m-health. Thus H1, H2, H3, H4 and H5 were supported. Finally, the result confirmed that HRIS adoption is positively associated with the extent of HRIS adoption ($t=2.615$, $\beta=0.25$), supporting H6 (Table 3).

Table 3. Structural Model

Hypothesis	Path	β	t-Statistics	Comment
H1	PE -> HRIS	0.35	4.654	Accepted
H2	EE -> HRIS	0.39	5.304	Accepted
H3	SI -> HRIS	0.36	3.765	Accepted
H4	FC -> HRIS	0.27	2.870	Accepted
H5	EITS -> HRIS	0.36	4.735	Accepted
H6	HRIS -> EHRIS	0.25	2.615	Accepted

5. Conclusion

It is the first study that extended UTAUT model with employee involvement and training support in the context of HRIS adoption in developing countries. The findings of this study indicate that the extended UTAUT is a good predictive model of HRIS adoption. Regarding UTAUT-related variables, the results show that PE, EE, SI, FC and the factors of extended UTAUT model EITS had a significant influence on adoption of HRIS.

The developed model in this study can easily be applied for examining the adoption of HRIS in other developing countries. The findings of the study are essential for the development of policies and strategies to adopt HRIS in developing countries because it identified the key factors that influence to adopt HRIS. The decision makers of an organization should consider to think about the employee involvement and the training support before adopting any technologies like HRIS. The higher rate of HRIS adoption among the organizations' in developing countries has opened a prodigious opportunity to use information technology in HR department. The findings of this study can be used by policymakers of organizations and government for the public sector to increase the adoption of HRIS in developing countries. Finally, special attention should be given to users who do not have any experience with HRIS.

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The Impact of Motivations on Employees Performance: Case Study from Palestinian Commercial Banks

Mohammed T. Abusharbeh¹ & Hanan Hasan Nazzal²

¹Faculty of Administrative and Financial Sciences, Arab American University, Palestine

²Master Student in Strategic Planning and Fund Raising, Arab American University, Palestine

Correspondence: Mohammed T. Abusharbeh, Faculty of Administrative and Financial Sciences, Arab American University, Palestine.

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Abstract

Motivation aims to empower and liberalize people as enhance their entrepreneurial abilities to recognize the interactions between humans and their abilities to work. Thus, this paper is aimed to examine the impact of motivations on employee's performance in Palestinian banking industry. The survey data was collected through distributing a questionnaire on employees that working in Palestinian commercial banks. Relied on Pearson correlation and multiple regression analysis, this paper reveals that moral motives are significantly and positively predicted employees performance. Moreover, the scholars find a high level of motivations provided to employees that working in Palestinian commercial banks. However, the material and social incentives are not predicted employees performance. On other side, the paper found that there are differences between the levels of motivation when it comes to the demographic data like qualifications, years of experiences, and job title. Finally, the study recommended that Palestinian banks needs to adapt and develop their motivation system in order to satisfy all employees' moral needs.

Keywords: moral motives, material motives, commercial banks, employees performance

1. Introduction

Motivation is playing significant role toward enhance the employees productivity and the organization or any institution. Moreover, a successful management in organization is one that looks at the human needs as the basis when developing a company strategic plan. Thus, employee's knowledge requires human resources to implement great reward systems as a way to motivate them. Therefore, motivation is important for successful companies because it refers the underlie behavior which is characterized by willingness and volition that intrinsic motivation is animated by personal enjoyment, interest, or job satisfaction (Guay et al, 2010).

In fact, Kreitner (1998) and Linder (1998) are defined motivations as the psychological process which gives behavior goals and direction. This indicates a tendency to work in a purposive way to achieve specific needs. Accordingly, it concluded that motivation is the basic issue in enhancing the work productivity and employees performance. Moreover, Many scholars such as Greeno (2012), Guay et al (2010) are classified it into two kinds of incentive; firstly, material motives that represent the financial rewards that are given to employees for their exceptional work. Secondly, moral motives is defined as a set of incentives aimed at achieving emotional, psychological and humanitarian needs of employees such as; thankful and gratitude in employee effort, in the aim of raising spiritual of improvement in their workplace. Thus, those two kinds of incentive are expected to fill the research gap between the employee's ability and their willingness. Consequently, the organizations have to motivate their employees in order to enhance them to give their best work as well as to increase their performance.

Initially, Maslow (1943) argued that each need to be satisfied, starting from the bottom of the pyramid till the top of it, and the person should fill each need to get to the next one. Moreover, Maslow argued that the unsatisfied need create tension and imbalance, and to get balance you have to satisfy each need in order to motive the unsatisfied needs. Meanwhile, Herzberg (1959) defined motivational factor as achievement, estimate, esteem, and promotion. This factor drives individuals to increase their effort and to make their best performance that help in achieving the organization goals.

This paper was driven by desire to improve the reward and motivational system at Palestinian commercial banks. Furthermore, to reinforce the culture loyalty and job satisfaction among employees and organization activities through the motivation factor.

Accordingly, this study is aimed to achieve the following objectives; firstly, to know the degree of motivation and performance among employees in Palestinian commercial banks. Secondly, to investigate relationship between motivation dimensions and employees performance at the Palestinian commercial banks. Thirdly, to examine the impact of moral, material, and social motives on employee's performance in the Palestinian commercial banks.

This paper is organized as follows; section II reviews the literature of motivation theories and related studies. Section III explains the research methodology, data variables collection and sample selection. Section IV analyzes the data variables and discusses the results. Finally, section V concludes the research paper.

2. Literature Review

2.1 Motivation Theories

2.1.1 Maslow Hierarchy of Needs

This theory was developed by Ibrahim Maslow (1943). It investigated the human motivation through explaining the human instinct curiosity. He stated the human needs which summarized in five needs: physiological, safety, social, and self-esteem. Moreover, this need creates the motivation that effect on the individual's behaviors and this need should be filled to satisfy the individuals. Moreover, Maslow expend his theory in 1954 through his book " motivation and personality". He argued that the unsatisfied need create tension and imbalance, and to get balance you have to safety each need in order to motive the unsatisfied needs.

2.1.2 Herzberg Theory

This theory was initiated by Herzberg (1959). He found that satisfaction and motivation effect by two kind of factors, which is health factor and driving factors. Further, Herzberg found that each human has two different group of human needs which this needs effects on person behavior in different way. Moreover, he found that individual dissatisfaction caused by inappropriate work environment. Furthermore, Herzberg revealed that the human will not feel satisfied unless he gets all kind of health, environmental, and physical factors.

2.1.3 Mc Cleland's Theory of Needs

Mc Cleland's in his theory divided the human needs into three desires; the need of achievement the need of affiliation and the need of power. He believed that the people who have the need for achievement they prefer to work with a responsibility to solve problems since they can't feel the achievement till they have the responsibility to solve the problem. Moreover, they have to tend to make a disciplined risk which means that they can't feel with achievement till the pass the challenges. Thus, they need feedback about their performance. The second type of need is the need of affiliation, which they care more about creating friendship and good social relationship, while the third part of need is the power, which they looking for authority and positions in the company (Royle, 2012).

2.1.4 X and Y Theory

This theory is created by Douglas McGregor (1960). He suggested two approaches in employee's behavior. Firstly, he assumes (X) that indicates employees hate work and lazy, so the management should use punishment, constant threat, and supervision. Secondly, (Y) that represents the employees who loving their work, well performed and loyal, so the organization should give them the good conditions and more incentives.

2.2 Types of Motivation

2.2.1 Moral Motives

Moktara & Zozo (2014) argued that a moral motive helps employees to fill their psychological needs in order to increase their loyalty to work. Furthermore, Al-Nsour (2012) stated that giving the employee the chance to participate in decision making enhance their performing in work. Therefore, moral motives (thankful letter, create honor list, extra vacation, confidence, administrative ranking, etc....) have a significant impact on employees performance (AbuSharkh, 2012).

2.2.2 Material Motives

Material motive is defined as the financial rewards that are given to the employees according to their extraordinary work (Mktara & Zaozo, 2014). Moreover, Yousif (2010) argued that financial motives (gifts, bonuses, advances, reward systems, etc...) encourage employees to give best performance in their work.

2.2.3 Social Services Motives

It defined as the social incentives that are given to all employees and fairly distributed among them such as solidarity fund and health insurance (AbuSharkh, 2012). Furthermore, the social service motivation aims to enhance the employees entrepreneurial abilities to do their best effort (Abdelhameed, 2011). Thus, this paper argues that social incentives could have a significant positive effect on employees performance.

2.3 Employees Performance

Performance is one of the most important subjects that concern the researchers and administrative leaders alike, this is because the performance reflects the expected result of each activity in organization. Therefore, it can be defined as the way in which employees perform their tasks during the production processes and associated processes by using the available means of production to conduct quantitative approach (Halaibah, 2013). Meanwhile, Fadeel (2014) defined it as the way that the organization achieves its goals. He argued that the overall output of an organization results from reconciling many factors such as capital, labor, and knowledge. Furthermore, performance is a reflection of the extent to which tasks are accomplished.

2.4 Previous Literatures

Octaviannand et al (2017) investigated the effect of job satisfaction and motivations on employees performance at xyz shipping company in south Jakarta, Indonesia. The sample of study was limited to 70 people from marketing department, customer service, logistics, documentation, cashiers, financial and port agency services. The data collected through a questionnaire using Likert scale. The results of study proves that there is positive and significant correlation between job satisfaction and motivation to employee performance. This means that the better job satisfaction and motivation of employees, the higher the performance of employees and the other hand, if the provision of job satisfaction and motivation is low, it will lead to decreased employee performance.

Elumah Lucas et al (2016) examined the impact of moral and material of incentives on employee's performance in some of the Nigerian universities. The aim of this paper is to know the role of Nigerian universities in satisfying employees needs and to improve their performance in work. The sample of the survey included of 218 employees that working in Nigerian universities. The result revealed there is an adequate level of incentives provided to workers in Nigerian universities. Moreover, there is a negative significant relationship between moral and financial incentives and organization performance.

Mensah E and Tawiah K (2016) compared employee's motivation and its impact on performance in Ghanaian Gold Mining companies. The study found that employees in the mining industry are well motivated to curb the rate. Therefore, the employees are to comply with health and safety rules because the industry contributes hugely to the Gross Domestic Product (GDP) in Ghana.

Obeidat and Al-Dwairi (2015) investigated the role of moral and material incentives on employee's performance in Academic libraries in Jordan. The sample of the study consisted of 10 Jordanian universities and the questionnaire was distributed to 420 workers on academic libraries in Jordan. The result indicated there was a strong significant impact of moral and material incentives on employee's performance in Jordanian academic libraries.

Zameer et al (2014) explored the impact of motivation on employee's performance on beverage industry in Pakistan. The structured questionnaire was distributed on the sample of 150 workers in beverage industry (Pepsi, Coca, and Grommet). The result concluded that the motivation has a significant positive influence on the performance of employees in Pakistan.

Al Halibeh (2013) investigated the effect of incentives on the performance of the Greater Amman Municipality staff in Jordan. The sample was selected by a random class method, consisting of 150 employees from the managers, heads of departments and administrative staff with 33% of the study population of 449 employees. The study based on a descriptive analytical method and regressions to answer research questions. The result revealed that both material and moral motivation at a low level and the acquisition of social motivation and performance at the intermediate level. But, the strong national coverage is between the levels of motivation and the employee's performance. Therefore, the study has promoted positive working relationships between employees and guided them with the goals of the trustworthiness of the work ethos as a moral motivation to reach the planned level of performance.

Anyim et al (2012) examined the relationship between motivation and job performance in private and public sector in Nigeria. They concluded that good work performance depends on largely on the contribution made by workers. Moreover, they argued that motivational factor brings out the best performance to employees in both private and public sectors.

Al- Jassasi (2011) investigated the impact of material and moral incentives in improving the performance of employees in the Ministry of Education in Oman. Thus, it used the descriptive analytical method and the structured questionnaire to collect the data. The sample of the study consisted of 290 heads of departments and employees in different directorates. The results indicate that there were no statistically significant differences regarding the attitudes of the study members about the effect of material and moral incentives on employee's performance in the Ministry of Education in Sultanate Oman.

Awda and Awad (2011) examined the impact of incentives on employee's job satisfaction at Nablus Specialist Hospital in Palestine. Moreover, it discussed the importance of renewing the incentives system in order to raise the level employee's performance. This study used a descriptive method and regression analysis to identify the effect of incentives on the employees in the hospital. They also distributed a questionnaire on a sample of 75 workers in the hospital. The results indicated a low level of material and moral incentives. Therefore, there is no statistically significant correlation between the motivation and the staff performance at Nablus Specialist Hospital.

Fares (2011) examined the impact of the incentive policies in the organizational loyalty in public institutions in Syria. The sample of study consisted of 324 employees from 4 different public institutions. It used descriptive statistics and multiple regressions to conduct the research output. The research findings indicated that there is no consensus in the employees' perceptions of the concept of incentive policies and organizational loyalty. However, it revealed that there was a strong and positive relationship between incentive, organizational loyalty, and job performance. Moreover, it concluded that there were no differences of statistical significance due to variables such as job title, scientific qualification, age and years of experience. The study recommended to increase the attention of training activities and continues development of employees in order to motivate them to be a part of the organization.

Yousif (2010) identified the types of material and moral incentives offered to employees in the industrial sector in the industrial city of Makkah Al Mukarramah. The sample of the study consisted of 134 workers in the industrial city of Makkah. Moreover, the descriptive analytical method was adopted using a questionnaire to cover the study axes. The results revealed a low level of moral incentive and lack of material incentive and also found a positive relationship of statistical significance between the application of material and moral incentives and between the performance and satisfaction with their work environment. In this regard, the study recommended the need to pay attention to the material and moral motivation in general and the need to pay particular attention to those types of incentives that got low grades such as advances, loans, and bonuses. As result, this paper can summarize the result of prior studies as follows:

Table 1. The Summary Results of Previous Studies

Authors	Year	Country	Directional sign	The result
Octaviannand et al	2017	Indonesia	+	Significant
Lucas et al	2016	Nigeria	-	Significant
Mensah and Tawiah	2016	Ghana	+	Significant
Obediat and Dwairi	2015	Jordan	+	Significant
Zameer et al	2014	Pakistan	+	Significant
Al-Halibeh	2013	Jordan	+	Significant
Anyim et al	2012	Nigeria	+	Significant
Fares	2011	Syria	+	Significant
Awda and Awad	2011	Palestine	+	Not significant
Al- Jassasi	2011	Oman	+	Not significant
Yousef	2010	Saudi Arabia	+	Significant

Table 1 showed that most previous studies gave great attention to the motivational factors on the employees performance and the organization. Despite the respondents and the differences in the sample study. Nevertheless, most prior studies found a strong significant relationship between motivations and performance. As many of the researchers found dereliction by organizations in motivating the staff. However, the employees expressed that motivation affected them and that makes the researchers argued the development that might be happened to the employee's performance in case of giving them adequate attention.

2.5 Research Hypotheses

Based on the related studies of motivations and employees performance. There are several dimensions that measured motivation including moral and material motives (Elumah, 2016; Al Halibeh, 2015; Moktara & Zozo, 2014; and Al Halibeh, 2013), Social services (AbuSharkh, 2012; and Abdelhameed, 2011). As result, most of scholars argued that the relationship between motivation dimensions and employees performance are significantly correlated. Thus, the research alternative hypotheses could be formulated as follows:

H₀₁: There is an empirical association between the types of motivation (moral, Material, and social services) and employees performance in the Palestinian commercial banks.

H₀₂: There is an empirical impact of motivation dimensions on employee's performance in the Palestinian commercial banks.

H₀₃: There are statistical significant differences in mean of motivation and performance for demographic variables (gender, Marital status, qualification, job title, and years of experiences).

3. Methodology

3.1 Research Design

This paper uses quantitative approach which derived from survey data that targeted the Palestinian banking industry. Basically, the research questionnaire was designed in order to interpret the relationship between motivation dimensions and employees performance. After that, the researchers uses multivariate analysis to test the research hypotheses and to conclude the results.

3.2 Data Gathering and Reliability

The survey data for this study was collected through using questionnaire which is distributed on employees that working in Palestinian commercial banks. The questionnaire consisted of five section. The first part of questionnaire is devoted to collect demographic data from Palestinian commercial banks include gender, qualification, marital status, years of experience, and job title. The second part describes moral motives which are structured into 17 items. Further, section 2 explains material motives which contained of 10 items. Section 3 clarifies social motives which are structured into 5 items. Fourth part is employee's performance that consisted of 9 items. However, the final part of survey explained the demographic and personal information about respondents which has 8 questions. Moreover, the overall items in four sections are 41 items answered by respondents using five- points Likert scale (Likert, 1932).

Consequently, the researchers calculated reliability of this study using Cronbach's Alpha to check the internal consistency among items of research questionnaire. Thus, Table 3 shows the results of Cronbach's Alpha coefficients. It was 91.5% for the moral incentives and 84% for the material motives. As overall result, the items of questionnaire are stable coefficient value of all fields (94%). This result is acceptable because it's greater than the percentage 0.60 (Tavakol and Dennick, 2011).

Table 3. Cronbach's Alpha Coefficients

Variable	No. of items	Cronbach's Alpha	Result/Pass
Moral motives	17	0.915	Yes
Material motives	10	0.840	Yes
Social Motives	5	0.630	Yes
Employees Performance	9	0.850	Yes
Total	41	0.940	Yes

3.3 Population and Sample Size

The total number of employees that working in Palestinian commercial banks is 6258 employee (PMA, 2016). Therefore, the population size of this paper is limited to the operated foreign and local commercial banks in west bank only (around 3150 employees), except Gaza strip due to the political obstacles. Thus, this paper used Krejcie and Morgan (1970) formula to estimate sample size of study. Furthermore, the sample was randomly distributed to employees that working in commercial banks in Palestine. Thus, the required number of respondents is 345 employees. Meanwhile, 350 questionnaire was distributed. However, 302 questionnaire were returned. The final questionnaire were analysed is 252 and 50 respondents were excluded due to the incomplete answers. Thus, the questionnaire is shown in Appendix.

In fact, this study is selected Palestinian banking industry as case study rather than other sectors because the average salary of employee in banking sector is expected higher than other sectors in Palestine. Moreover, few prior studies are primarily used banking industry as case study in relationship between motivations and performance.

3.4 Research Model

This paper is aimed to address the influence of the motivations on the employees performance at Palestinian banking sector. It's essential for the banks to reinforce the spiritual team work among their employees through motivating them and meeting their needs in order to do their best work. Therefore, the conceptualized model is developed based on motivation theories and some related studies in order to achieve the goals and to test the

research hypotheses. Figure 1 shows the relationship between the independent variables and dependent variable. Subsequently, this research model is designed as follows:

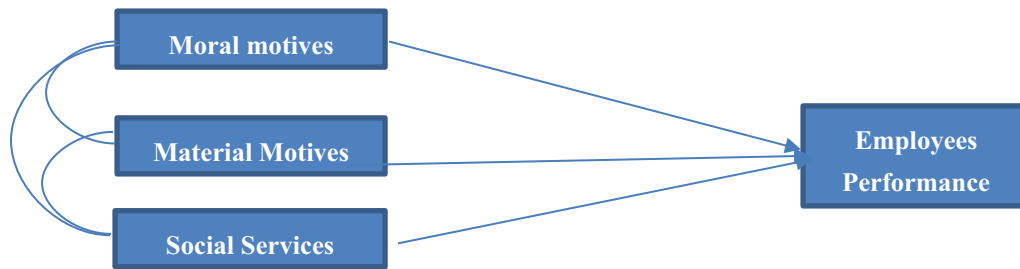


Figure 1. Research Model

Source: Researchers

4. Data Analysis and Discussion

This part presents the descriptive statistics of research variables includes mean, standard deviation and the estimated level of each variable by respondents. In addition, the data variables were analysed by using correlation matrix and multiple regression to test the alternative hypotheses and to conduct the research findings.

4.1 Descriptive Results

Table 3 shows that moral motives have a high mean value of 4.07 out of 5 and deviated by 0.6. This indicates that 81.5% of respondents have the same point view to the importance of moral incentive in employee’s productivity. Meanwhile, 80.5% of employees agreed that material incentives have a significant effect in environment work in organization. On the other hand, employee’s performance has a mean value of 4.29 and deviated by 0.54. This implies that there is a high level of motivations and performance provided to the employees that working in banking sector in west bank.

Table 4. Means and Standard Deviation of Research Variables

No.	Dimension	Mean	St. Dev.	%	Degree
1.	Moral motives	4.07	0.60	81.5%	High
2.	Material motives	4.02	0.60	80.5%	High
3.	Social Motives	3.95	0.61	79.0%	High
4.	Employees Performance	4.29	0.54	85.7%	High

4.2 Testing Research Hypotheses

The relationship between the variables are analysed by using Pearson correlation coefficients. Table 4 shows that most of explanatory variables are positively correlated to each other's at significant level of 1% (r12= 64%, r13 =49%, r23= 64%) respectively. However, the only moral motives are positively correlated with employees performance at significant level of 1% (r14 = 53%). This indicates that the alternative hypothesis is accepted and there is positive significant relationship between moral motivation and employees performance at the Palestinian commercial banks.

Table 5. Pearson Correlation Coefficients

Dimension	1	2	3	4
Moral motives	1			
Material motives	** .6400	1		
Social Motives	0.490**	0.648**	1	
Employees Performance	0.530**	0.327	0.325	1

** . Correlation is significant al level 0.01(2- tailed).

Based on the above table, the researchers can conclude that; motivations partially moral incentives play avital role in enhancing the effort of employees to get the best work at Palestinian banking industry. This means that the banks could improve their productivity through developing the reward and motivation system. This argument is confirmed the result of motivation theories such as Herzberg theory (1954) that stated motivation has a significant effect on employees behavior in work and that boost them toward improve their performance in work. Moreover, this result is consisted with other prior studies such as; Mensah and Tawiah (2016), Zameer et al (2014), and Al Halibeh (2013).

Table 6 shows the result from using ANOVA, the coefficient of determination R² is 29.9% which implies that independent variables (moral, material, and social services) explain nearly 30% from the variation of dependent

variable (employees performance). Moreover, the p-value is less significant level 5%. This means that the overall regression model is significant at the 0.000 level with F distribution of 35.24. Moreover, It can be concluded that there is significant positive relation between moral motives and employees performance because t- value is greater t- statics 1.96 and p-value is less than the significance level of 0.05 (p-value=0.000). However, other predictors (material and social) did not have any significant impact on employee's performance in Palestinian banks, because p-values for material and social are greater than 5% (p-value =21% and p-value = 8%) respectively.

Table 6. Multiple Regression Model (Dependent: Employees Performance)

Model	Unstandardized Coefficients		Standardized Coefficients	t -value	Significant
	B	Std. Error	Beta		
Constant	2.233	0.226		9.874	0.000
Moral motives	0.487	0.063	0.541	7.755	0.000
Material motives	-0.090	0.072	-0.100	-1.251	0.212
Social Motives	0.109	0.062	0.124	1.761	0.079
R square 29.9%,	Adjusted R square 29% ,		F- test value 35.24,	Sig 0.000	

(Source: Researchers)

Based on the above table, the researcher can reveal that; the only "moral motivations" are positive and significant impact on employees productivity as shown in multiple regression model. This implies that the moral incentives (thankful letters, Honor list, confidence, and sharing in decisions) in banks enhance the employee's productivity in work. Thus, this paper argues that good moral motivation is essential to achieve bank goals. The effective motivational programs in the bank can achieve moral spiritual among employees work. Thus, this argument is confirmed by Obeidat and AL-Dwairi (2015).

Surprisingly, financial rewards are not significantly predicted the employee's performance. This indicates that there is adequate level of material incentives that provided to employees that working in Palestinian commercial banks. This result is conflicted with Elumah Lucas et al (2016) that argued material motives have significant negative impact on employee's performance. Therefore, the employees in Palestinian commercial banks are thinking in moral motivation rather than financial incentives. As result, the econometric model can be estimated based on unstandardized coefficients as follows:

$$Performance = 2.233 + 0.487 (Moral Motives) - 0.090 (Material) + 0.109 (Social)$$

The interpretation of the above model indicates that there is a direct impact of moral motivation on employee's performance. This means that the increase in moral incentives by 1 unit could increase the employee's productivity by 2.7 units.

Table 7 shows that there are no differences between male and female in respondent to the motivation and performance (p value = 91% and p value = 86% respectively) which are greater than significant level of 5%. Similarly, there are no differences in mean between single and married employees regarding to motivation and performance. Further, there are no significant difference among employees qualifications regarding motivation and performance. However, it can be found there are significant statistical differences between the years of experiences in respondent to motivation and performance. Moreover, there are significant differences among employees job title regarding to motivation but, indifference in relating to performance.

Table 7. The result of T-test and One way ANOVA

Demographic data	Motivations		Performance	
	F-value	Sig	F - value	Sig
Gender	0.113	0.910	0.663	0.860
Marital Status	0.455	0.647	0.160	0.873
Qualifications	0.036	0.965	1.877	0.155
Years of Experiences	3.092	0.028	6.181	0.000
Job title	3.178	0.025	0.678	0.566

Denoted to significant level 5%

5. Conclusions and Recommendations

The main purpose of this paper is to examine the impact of moral and material motives on employee's performance as case from Palestinian commercial banks. A sample of 252 employees was selected from all Palestinian commercial banks. Multiple regression and Pearson correlation are used to test the research hypotheses and to reveal the research findings. The result concludes that moral motives have a significant and

positive impact on employee's performance. Nevertheless, the material and social motives have not any significant influence on employee's behavior in their workplace. Therefore, this paper reached to the following conclusions:

- There is a high level of association between motivation and employees performance at the Palestinian commercial banks.
- There is a strong positive impact of moral incentives on employee's performance in Palestinian commercial banks.
- There is a negative insignificant impact of material motives on employee's performance in Palestinian banking industry.
- There is a positive insignificant impact of social motives on employee's performance in the banks.
- There are no statistical differences in mean of gender and marital status regarding to motivations and employees performance. However, there are significant differences in mean of qualifications, years of experiences, and job title.

This paper is subject to a limitation because it covered only part of banking industry in Palestine which is commercial banks. Thus, the result could be varied from one study to another one. Other important limitation is that the incentives approach that adopted by Palestinian commercial banks could be different from bank to another or from industry to another one.

Finally, this paper recommends that Palestinian commercial banks can adapt and develop their motivation system in order to satisfy all employees' needs, like compliments the employees as giving them souvenirs and awards also share them with the decision and trust them. Moreover, the study recommends focusing on moral motivation more than social and material motivations, since the study showed the positive relationship between moral motivation and performance, in contrast to the stimulation of material and moral. In this sight, Palestinian local banks should take care for their employees in order to get high level of performance and profitability. Thus, moral incentives are given according to their level of effort in order to persuade the employees to do their best without vested interest.

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Material Motivation

Item	Strongly				Strongly
	agree	Agree	Neutral	Disagree	disagree
The bank is committed to paying wages regularly and on time.					
I think that the wages and salaries have a direct impact on the employee behavior and performance.					
The bank permanently seeks to adjust wage scale according to the economic conditions and to the employee standard of living.					
I'm satisfied with the wages offered by the bank and it fit to my qualifications and job title.					
The bank provides advances system to its employees and motivates me to work harder.					
The bank is committed to limited working hours and pays a fair financial reward on overtime work.					
The bank applies the standard of living according to the law and this makes me feel more satisfied in my work.					
The bank has a clear policy regarding to the financial reward that is fairly applied to all employees in the bank.					
I think that the quality of the production and performance in the Bank are directly linked to the increase in wages and financial rewards.					
I think that the bank should give the material reward only to innovated employees and who have a special efforts.					

Social Service Motive

Item	Strongly				Strongly
	agree	Agree	Neutral	Disagree	disagree
The bank has a compensation system for accidents or injuries.					
The bank has a health insurance system for its employees.					
The bank helps the new employees and their family in finding accommodation.					
The bank provides indemnity for its employees.					

Employees Performance

Item	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I think loyalty to the bank improves my work performance.					
I think the efficiency of work depends on the manager clarification of bank objectives.					
I think the collaboration between Bank staff improves the employees performance.					
I feel comfortable in my work and that makes me performed very well.					
I feel that motivation boost my work to the maximum performance.					
I think that the increases of my performance level depends on the job satisfaction.					
Feel confidence in the work makes me performed very well.					
Having a retirement fund makes me fearless of the future and not looking for other sources of income.					
The bank production is linked to the quality of performance and the effort for production.					

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Determinants of Bank Credit Risk in Developing Economies: Evidence from Benin

Kevin Ghislain Adjé¹

¹Laboratoire SERGe, UFR SEG, Gaston Berger University, Saint-Louis, Senegal

Correspondence: Kevin Ghislain Adjé, Laboratoire SERGe, UFR SEG, Gaston Berger University, Saint-Louis, Senegal.

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Abstract

Our study mainly focuses on the determinants of credit risk of Beninese banks. Theoretical and empirical literature teach us that both external and internal factors are the determinants of credit risk. From a sample of seven (07) commercial banks (only one of which is listed on the BRVM), we tested the simultaneous effect of external and internal factors on credit risk over the period 2004-2013. After an econometric analysis on panel data (fixed effect model estimated by the PCSE method), it appears that the "growth of GDP", "credit by signature", "interest margin" and the "proportion of institutional administrator" are the determinants of credit risk. Therefore, political authorities and bank officials could improve credit risk management by issuing policies on these factors.

Keywords: balanced panel, bank governance, benin, credit risk, determinant

1. Introduction

The main function of commercial banks is to finance the economy by granting credit to the different actors of economic life. Thus, banks provide the function of intermediation between agents with surplus funds and those with funding deficits. However, despite innovations in the sector, the supply of this service exposes banks to many risks (Greuning & Bratanovic, 2004). One of these risks is the credit risk. Credit risk simply means the likelihood that the borrower will fail to honor the terms of the loan agreement. This risk is emphasized by the phenomenon of information asymmetry which creates adverse selection and moral hazard. Some important researches (Vazquez, F., Tabak, B. M., & Souto, M. 2012; Fofack, 2005) reveal that this risk is the source of banking crisis. As an illustration, the banking crisis that affected a large number of countries in sub-Saharan Africa in the 1980s was accompanied by a rapid accumulation of non-performing loans (Fofack, 2005). In Benin Republic 80% of the bank loan portfolios were reported unproductive. 16% for Burkina-Faso, 50% for Ivory-Coast, 75% for Mali, 50% for Niger and 50% for Senegal of loans from banks were also reported unproductive (Powo 2000). This crisis cost the Central Bank of West African States 400 to 500 billion CFA francs, about one quarter of the money supply in circulation.

More than two decades after the liberalization of the banking sector in UEMOA¹, Benin Republic still remains one of the most affected countries by the credit risk problem. In fact, numerous reports from UEMOA (2012), FMI²(2015) from BM³ (data base, 2015) and Economist Abdoulaye Bio TCHANE (RFI, July 2015) underline that banks in Benin Republic are characterized by a large amount level of unhealthy portfolio. In Benin Republic, bad debts saw their stock increase by 67% that is 16 billion CFA francs in 2002, whereas they had decreased by 30% a one year earlier. Outstanding loans frozen by banks stood at 54.6 billion as of June 30, 2012 (Information Note Q4 2012). At the end of 2011, two (02) banks were closely monitored by the monetary authorities and another insolvent for several years, was closed in March 2012. In addition, banks' loan portfolios have been deteriorated. They reached 14.4% in 2010; 15.16% in 2011 and 18.6% in July 2012, representing an average rate of 16.05% over the period 2010-2012. However, for the same period the average rate of unproductive loan portfolios was 9.87%

¹West African Economic and Monetary Union

²Central Bank of West African States

³International Monetary Fund

in Nigeria, 5.1% in Kenya, 5.9% in Gabon, 4.83% in South Africa, 4.13% in France, 3.83% in the United States and 1.97% in Australia.

Given these statistics, one deduce that the rate of non-performing loans in Benin is above international standards. Therefore, the study of credit risk in the Beninese context is of particular interest. Thus, our work will try to answer to the following question: what explains a considerable volume of non-performing credits in the Beninese banking sector?

Several studies have been conducted on the determinants of bank credit risk, especially in emerging countries (Ariff & Marisetty, 2001; Simpson & Gleason, 1999; Powo, 2000; Pathan, 2009 etc.). However, the banking sector of UEMOA and particularly of Benin remains unexplored, despite the upsurge of the problematic of credit risk in recent five years. To our knowledge, the determinants of credit risk in Benin's banking sector is one of the few gray areas that aspire to intellectual exploration. Therefore, the present study aims to contribute to the literature on the Beninese banking sector by exploring the determinants of the credit risk of these banks: with particular emphasis on the typology of credit granted (this approach makes it possible to understand indirectly the borrower behavior) and the structure of the board in managing credit risk. The main motivation behind this study is to improve the understanding of credit risk modeling at the micro level.

The rest of the document is organized as follows. The next section discusses the literature review, followed by the methodology. The penultimate section presents the results, and finally the conclusion.

2. Review of Literature on Credit Risk and Its Determinants

2.1 Theoretical Anchoring of the Research

Credit risk management depends on external and internal factors to banks. Thus, the risk of non-repayment of credits is based on factors inherent to the intrinsic qualities of the projects to be financed and / or solvency of the borrower himself. Among these factors, we cite banking governance and the banking relationship. Indeed, excessive credit risk taking is the result of inefficient governance mechanisms or poor control of the credit decision process as well as poor processing of information on the quality of the borrower (Boussaada, 2012). Thus, in our research, we apprehend credit risk through: the theory of corporate governance. Indeed, bank credit results from a process linking different agents whose interests differ. For instance, the interests of executives may differ from other stakeholders: mainly shareholders and depositors. Then, the control and management of bank credit risk is mainly the responsibility of the shareholders, the board of directors and the banking regulators. In addition, the ultimate responsibility for risk management within UEMOA banks is conferred on the social bodies (board of directors...) through the loan committee. The role of this committee is to follow the standards, to guarantee the quality of loans and to ensure the respect of loan procedures and policies. However, the committee reviews loans before or after funding, while ensuring that the approval threshold corresponds to the borrower's loan amount or debt capacity. It is also responsible for maintaining adequate reserves for loan losses. In addition, the Board adopts a set of guidelines that defines the types, size and expiry date of the loans to be granted, including loan application review procedures and the review of the bank's loan portfolio. So, the board of directors through its attributions is supposed to control the risk taking of bank credit. In addition, the ultimate responsibility for risk management within UEMOA banks is conferred on the social bodies (board of directors...) through the loan committee. Its role is to follow the standards, to guarantee the quality of loans and to enforce loan procedures and policies.

However, the Committee considered the loans before or after the funding, while ensuring that the threshold for approval is equivalent with the creditworthiness of the borrower. It is also responsible for the maintenance of adequate reserves for the loan losses. In addition, the Council adopts a set of directives, which define the types, the size and the expiry date of the loans to be granted. Also, the Council adopts the procedures for revision of loan applications and review of the loan portfolio of the Bank. Thus, the Board of Directors through its powers is supposed to control bank credit risk taking.

2.2 Review of the Empirical Literature and Research Hypotheses

From the academic literature there are two schools of thought that explain the determinants of the credit risk of the Bank: external variables theory and internal variables theory (Corsetti et al, 1998).

Literature provides evidence that suggest a strong association between credit risk and several external factors (Salas & Saurina, 2002; Khemraj & Pasha, 2009; Ali & Daly, 2010). Examining the Spanish banking sector from 1984 to 2003, Jiménez and Saurina (2006) find that the credit risk is determined by the growth of the GDP. Basing on the same model, Khemraj and Pasha (2009) studied the determinants of credit risk in the Guyanese banking sector. They found out that the GDP growth is inversely related to credit risk. This suggests that the

improvement in GDP translates into the real economy by a decline in bad debts, by ricochet bank credit risk. In a study of OECD and Asian countries, Ariff and Marisetty (2001) found that the gross domestic product (GDP) is negatively related to the risk of the Bank. Recently, Ali and Daly (2010) in their comparative study between the United States of America (USA) and Australian economy on the macroeconomic determinants of the credit risk of the Bank found that GDP has a statistically significant negative relationship. Therefore, the following hypothesis is to be tested: H1: the GDP growth has a negative impact on the risk of bank credit.

Nkusu (2011) and Klein (2013) studied the effect of inflation rate on the quality of loans. According to Klein (2013), the impact of inflation is ambiguous: (i) inflation can make loan repayment easy by reducing the real value of outstanding loans and (ii) it can reduce the real income of borrowers when wages are rigid. In countries where the loan rate is variable, higher inflation may lead to higher rates resulting from monetary policies intended to combat inflation (Nkusu, 2011). Thus, despite this mixed finding, the following hypothesis will be tested:

H2: the inflation rate positively influences the risk of bank credit.

Today, competition forces banks to concede a few rules of good management. Indeed, a high competition could encourage banks to have excessively risky behavior (Salas and Saurina, 2003, among others) and especially in the presence of the prudential constraint that actually modifies the effects of the market power of banks on their risk-taking behavior. The empirical results show, on one hand, that crisis are less likely in countries with strong banking concentration (Lapteacru, I.2012) and on the other hand, a strong concentration of the banking sector could lead to monopoly profits according to Molyneux and Thornton (1992).

According to Short (1979), banks operating in a highly concentrated banking sector are susceptible to collusion practices. In general, a concentrated banking sector is positively correlated with profit and negatively correlated with risk. This is in line with the assumption of market power which asserts: a large market power leads to monopolistic profits. This leads to the following hypothesis:

H3: The higher the bank concentration, the lower the bank credit risk.

Other academic literatures argue that internal variables are the determinants of credit risk (Angbazo, 1997). Among these internal variables one can distinguish bank-specific factors and variables related to the structure of the organization. It is clear that the best approach to reporting on borrowers' credit repayment behavior would have been direct data on their situation. Nevertheless, the diversity of clients, the absence of average behavior and the asymmetry of information do not allow the use of this approach. Thus, we adopt an indirect approach that apprehends the behavior of borrowers through the credit activity of banks. The credit activity of banks includes signed commitments (usually reserved for businesses), campaign credits and ordinary credits. In addition, campaign and signed commitments are relatively compromised (Abdou, 2002).

This correspondence is predictable for campaign credits where disbursements are staggered throughout part of the year for the purchase: (i) seeds, fertilizer, personal consumption or they retain products and sold them at times well determined, (ii) school items, the bulk sale of which is mainly in the fall (in September and October), (iii) toys that are requested at holiday periods and (iv) farmers who buy lean beasts in the logic of fattening them and reselling them later. These activities are seasonal for both production and marketing. Given the risks of this activity (slump, lower prices of products, perishable products, diseases, drought, food costs) the bank runs the risk of unpaid. Thus, the following hypothesis is to text:

H4: The higher the campaign credit, the higher the credit risk.

Ordinary loans are credit agreements where an amount of money is made available to an individual over a certain period of time (a few months or even a few years, but not more than 5 years). This type of loan is not intended to finance a purchase of specific property, it is often used to meet certain expenses. As a result, there are various ways to meet the needs of borrowers according to their repayment capacity which must not exceed one third of their income. In order to benefit from such credit within the banking institutions, the beneficiary's salary should be deposit at the lending bank, and the borrower provide evidence that certifies that he has a permanent employment contract and a 'insurance contract. For such credit, the problems of moral hazard and adverse selection are likely to be removed. Thus, the following hypothesis is to be tested:

H5: The larger the ordinary credit, the lower the risk of bank credit.

In the case of signed commitments, banks help companies in the form of commitments. These commitments correspond to two distinct categories: financing commitments and guarantee commitments. In terms of risk for the bank, both are very similar to credits. Because the bank is committed to grant a contest with conditions of duration and preset rate. However, the fact that credits by signature, do not require immediate disbursement and

very often no disbursement, the bank may be tempted to accumulate its commitments in order to make the most profit. This can cost him a lot if its clients fail (The risk is difficult to assess, the monitoring of commitments is cumbersome to manage, there is often a shift in commitments over time). In the financial statements, the considerable amounts attributable to off-balance sheet transactions show that it is now impossible to analyze an institution without thoroughly studying the level and components of its off-balance sheet, even if relating to financial futures transactions should be interpreted with caution. This leads to the following hypothesis :

H6: A high level of credit by signature generates an increase in the risk of bank credit.

The policy of increasing interest rates leads to a change in the configuration of the qualitative structure of the debtor groups. Thus, the players in the credit market are therefore sensitive to interest rates. As a result, an increase in lending rates is likely to lead to a deterioration in the situation of all credit market players. The margin appears as an important determinant of credit risk for Poland, the Czech Republic, Hungary, Slovakia and Latvia. Thus, faced with an increased probability of non-repayment of loan funds, banks would react by imposing more prohibitive pricing on potential borrowers (Goyeau, Daniel; Sauviat, Alain & Tarazi, Amine, 1999). H7: The higher the interest margin, the greater the risk of bank credit.

Board structure studies have often shaped three specific elements: the size of the board of directors, the number of independent directors and the number of institutional directors (Pathan & Skully, 2010).

According to the agency theory, the effectiveness of the board, as a control mechanism, depends on its size. Because, the disciplinary function is better ensured by a board of directors of reduced size, composed of 7 to 8 administrators (Jensen, 1993). In contrast, Baysinger and Zardkoohi (1986) argue that in highly regulated sectors, such as the banking sector, an expanded board of directors allows for more effective control, then leads to a better control the credit risk of banks. However, Andres and Vallelado (2008) specify that beyond a certain limit (19 directors) the problems caused by the large size of the board of directors outweigh the benefits that are associated with it (Andres & Vallelado, 2008), while Simpson and Gleason (1999) find no significant effect of the number of directors on the financial distress risk of 300 listed US banks. Nonetheless, Sumner and Webb (2005) rely on a sample of 316 US commercial banks during 1997 to find that the structure of the board has an impact on credit policies. This leads to the following hypothesis:

H8: The larger the size of the Bank's board, the lower the risk of bank credit.

Based on the agency theory, Fama (1980) and Fama & Jensen (1983) argue that independent directors are more motivated to control leaders and to ensure that they pursue policies that are compatible with shareholders. They are encouraged to protect their own interests, namely the development and preservation of a good reputation as an independent expert in the competitive market for directors. As an example, Boussaada (2012) studying the impact of banking governance on the credit risk of listed Tunisian banks, he provides proof that independent directors can reduce credit risk. In contrast, Greuning and Bratanovic (2004) argue that, in practice, outside directors are appointed by manager with the approval of shareholders. For this purpose, rare are external directors who exert a real influence on the risky activities of the bank. So, the results related to the role played by the independent directors on the board of directors of banks remain mixed. Thus, this hypothesis is to be tested :

H9: The greater the number of independent directors, the lower the risk of bank credit.

Institutional investors are banks, insurance companies, collective investment schemes and pension funds. Jensen (1993) argues that institutional shareholders are experts who can exercise more effective control over executives because they hold significant capital shares. They are independent of management (Brickley, J., Lease, R., & Smith, C. 1988), bear high control costs and are therefore motivated to exercise their power of control over managers to secure their wealth. In contrast, Pozen (1994) argues that most institutional investors are not active because they do not want to incur significant control costs. Coffee (1991) argues that in case of poor performance some institutional investors are motivated by the sale of their blocks of shares rather than the exercise of their supervisory and disciplinary power of directors. They favor liquidity over control. This leads to the following hypothesis:

H10: The proportion of institutional administration has a negative impact on bank credit risk.

3. Methodology of Research

This section describes how the study was conducted. It describes the econometric model used, the sample and the source of the data.

3.1 Data

Today, the Beninese banking sector is made up of 13 banks: 12 commercial banks (whith only one of which is

listed on the Regional Stock Exchange (BRVM)) and one national representation of the BCEAO. The sample of our study is made up of 7 out of 12 commercial banks in Benin (ie about 59% of the study population) over a period of 10 years (from 2004 to 2013) which represent a panel of seventy (70) observations. Subsequently, it was necessary to focus on the nature of the panel, cylinder or non-cylinder. We chose to use a cylinder sample. So, it is about retaining the banks having all the data over the whole period considered. The choice of a balanced panel results from the need to test the model over several years by addressing the largest number of econometric tools. For this purpose, the selection of the sample was made according to the following criteria : (i) balance sheets and income statements of banks are available and published over 10 consecutive years, over 12 months of activity and (ii) the data financial information is updated. The choice of the year 2004 as the date of the beginning of the study is not arbitrary. Indeed, we found that in Benin Republic, it was from 2004 that it had stability in the balance sheet data of the banks. Regarding the date of the end of the study, we chose the year 2013 based on the data we have.

The data used were taken from (i) the annual report and financial statements of each bank, (ii) the BCEAO (Central Bank of West African States) database which provides balance sheets, accounts detailed results and (iii) directories of banks and financial institutions of UEMOA (West African Economic and Monetary Union).

3.2. Variable construction and empirical model

We present all the variables of the model as well as the data sources that we used to determine the coefficients of the model. The choice of indicators comes from both the theoretical and empirical literature and the availability of data. To estimate the credit risk, we take into account the ratio of the share reserved for the credit risk (provision required) on total credits. By total credits, we mean the outstanding loans of the bank. This ratio focuses exclusively on the credit risk of banks. Banks with risky assets will offer a substantial portion of these assets at a loss, which will reduce net profits and capital. Thus a high value of this ratio would contribute positively to the likelihood of going bankrupt. So, we use this ratio to measure credit risk as in Goyeau Daniel, Sauviat Alain, Tarazi Amine, (1999). In our empirical trial, we use, as in the majority of studies in the literature (Boussaada, 2012), a standard model that uses the following panel model specification :

$$Y_{i,t} = \alpha_i + \beta X_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where Y is the dependent variable, X is the independent variables, $\varepsilon_{i,t}$ the disturbance and (i, t) indicating respectively the bank and the time. Therefore, the following equation of credit risk to will be estimated :

$$\begin{aligned} \text{Risk}_{i,t} = & C_i + \beta_1 \text{CrE}_{i,t} + \beta_2 \text{INF}_{i,t} + \beta_3 \text{CoB}_{i,t} + \beta_4 \text{CrC}_{i,t} + \beta_5 \text{CrS}_{i,t} + \beta_6 \text{MaI}_{i,t} + \beta_7 \text{CrO}_{i,t} + \beta_8 \text{TCA}_{i,t} \\ & + \beta_9 \text{AInd}_{i,t} + \beta_{10} \text{AIns}_{i,t} + \varepsilon_{i,t} \quad (1 \leq i \leq n ; 1 \leq t \leq T ; n = 7 \text{ banks ; } T = 10 \text{ years}) \end{aligned}$$

To determine the appropriate estimation method, we will perform certain tests, including the individual effects presence test, heteroskedasticity test, the autocorrelation error test and the stationarity test of the series observed.

Table 1. Summary of variables with expected sign

Variables	Measures	References	Sign expected
Dependent variable			
Credit risk (Risk)	$Risk = \frac{\text{necessary Provision}}{\text{Total credit}}$	Goyeau Daniel, Sauviat Alain, Tarazi Amine (1999)	
Independent variables			
GDP growth (CrE)	CrE = Rate of growth	Ariff et Marisetty (2001) ; Ali et Daly (2010)	-
Inflation (INF)	INF = Inflation rate	Shu (2002) ; Nkusu (2011) et Klein(2013)	+
Banking concentration (CoB)	Hirschman Index $HHI_t = \sum_{i=1}^n X_{it}^2$	Lapteacru, I. 2012	-
Campaign credit (CrC)	$CrC = \frac{\text{Campaign credit amount}}{\text{Total credit}}$	ABDOU, 2002	+
Credit by signature (CrS)	$CrS = \frac{\text{signed commitment amount}}{\text{Total Assets}}$	-	+
Ordinary Credit (CrO)	$CrO = \frac{\text{Ordinary credit amount}}{\text{Total credit}}$	-	-
Margin of interest (MaI)	MaI= log Interest (perceived-paid)	Angbazo, 1997	+
Size of the board (TCA)	TCA = log (Nbr director of the board of directors)	Sumner et Webb (2005) ; Pathan (2009)	-
Proportion of independent director (AInd)	$AInd = \frac{\text{Nbr of Independent director size of the board}}$	Andres et Vallelado (2008) ; Pathan (2009).	-
Proportion of institutional administrator (AIns)	$Ains = \frac{\text{Nbr of Institutional director size of the board}}$	Andres et Vallelado (2008) ; Pathan (2009).	-

4. Results

A priori, the different variables of the model are stationary in level, with the exception of three variables "campaign credit (CrC), size of the board of directors (TCA) and the size of the independent directors (Aind)", which are stationary in first difference. As a result, we conclude that there is no co-integration relationship.

4.1 Examination of Correlations

Table 2. Variables Correlation Matrix

	Risk	CrE	CoB	INF	CrC	CrS	MaI	CrO	TCA	AInd	AIns
Risk	1.0000										
CrE	0.1404	1.0000									
CoB	0.2687*	-0.3444*	1.0000								
INF	-0.0709	0.3658*	0.1812	1.0000							
CrC	0.0226	0.1275	0.0469	-0.0385	1.0000						
CrS	0.3845*	0.1164	0.0889	0.0581	-0.1288	1.0000					
MaI	-0.6715*	0.1084	-0.2443*	-0.0037	-0.1301	-0.2500*	1.0000				
CrO	-0.1555	0.1460	-0.4888*	-0.0171	-0.4230*	-0.2041*	0.4018*	1.0000			
TCA	-0.4576*	-0.0035	-0.0639	-0.0114	-0.0438	-0.3976*	0.5735*	0.1731	1.0000		
AInd	-0.4155*	0.0494	-0.0776	0.0708	0.2248*	-0.1767	0.0439	-0.0685	0.2197*	1.0000	
AIns	0.2440*	-0.0135	-0.1389	-0.0501	0.1346	0.3333*	-0.5167*	-0.3478*	-0.3584*	-0.0526	1.0000

Before starting the multivariate analysis, we want to check the possible multi-collinearity between the independent variables of our model. Multi-collinearity can distort the precision of estimating regression coefficients and make the estimated values of the coefficients sensitive to small data fluctuations (Bourbonnais, 2009). To do this, we

studied the correlation matrix above. The study of the correlation matrix (Table 2) reveals a weak correlation between the variables, with the exception of the pair (MaI, Risk), (TCA, MaI) and (AIns, MaI) which are moderately correlated respectively to 67.15%; 57.35%; 51.67%. Since the correlation coefficient between these variables is less than the limit value (ie 0.8), then no serious problem of multi-collinearity (Kennedy, 2003). So, we confirm that we are not confronted with a problem of correlation of variables in our sample.

4.2 Diagnostic Tests and Data Estimation

The results of the diagnostic tests and the estimation are summarized below:

Table 3. Data Diagnostic Test

Test	Results
Individual effects presence test	test that all $u_i = 0$ F(6, 53) = 5.11 Prob > F = 0.0003
Hausman Test	Chi2(10) = (b-B)'[(V_b-V_B)^(-1)](b-B) = 40.31 Prob > chi2 = 0.0000
Breush-Pagan LM heteroscedasticity test	Prob > F = 0.0000 R-squared = 0.9542 Adj R-squared = 0.9464
Auto Correlation Test for Wooldridge's Errors	F(1, 6) = 9.965 Prob > F = 0.0196

Fisher's statistic (Table 3) reveals a near-zero probability, which leads us to reject the null hypothesis and conclude that our model includes individual effects. The individual effect model assumes that the model to be estimated differs individuals only by the value of the constant (Bourbonnais, 2009). When we detect the presence of individual effects, there is the problem of specification of its effects: are they fixed (the individual effect is constant over time) or random (the constant term is a random variable)? To discriminate between these two models, we performed the Hausman specification test. We found that the p-value of the Hausman test is below the 5% threshold, implying that the fixed effects model is preferable to the random effects models. To verify the absence of biases likely to alter the significance of our coefficients, we performed heteroscedasticity and autocorrelation tests. The negligence of these two problems affects the accuracy of the estimators, which can have a negative impact on statistical inference (Pirrotte, 2011).

The result of the Breush-Pagan LM test (Table 3) leads us to reject the null hypothesis and indicate the presence of a heteroscedasticity problem between errors. This is explained by the fact that the p-value of the test is less than 1%. Regarding the presence or absence of an autocorrelation of errors, we found that the p-value of the test is less than 5%. Therefore, there is a problem of autocorrelation of errors of order 1.

We must take into account the problems detected by previous tests (Diagnostic Data Test) in the model estimates. The Generalized Least Squares method should be used to overcome these problems. However, Beck and Katz (1995) have shown that the Generalized Least Squares method tends to overestimate the significance of coefficients. Thus we opt for the PCSE method (Panel Corrected Standard Errors) proposed by Beck and Katz (1995). The latter allows to correct the problems of heteroscedasticity and autocorrelation of errors and producing more robust results. The results from the application of this estimation method are as follows:

Table 4. Results of the regression [Estimator: Panels Corrected Standard Errors (PCSEs)] (1)

Variables	Coefficients	Std- Error	Z- Statistic	P > z
CrE	-0.0004*	0.0002	-1.76	0,078
CoB	0.0031	0.0132	0.24	0.811
INF	0.0000	0.0001	0.46	0.647
D.CrC	0.0117	0.0096	1.21	0.225
CrS	0.0078**	0.0038	2.08	0.038
MaI	-0.0070***	0.0015	-4.68	0.000
CrO	0.0018	0.0060	0.31	0.758
D.TCA	0.0010	0.0031	0.31	0.753
D.AInd	-0.0056	0.0061	-0.91	0.364
AIns	-0.0031*	0.0028	-1.61	0.102
Cons	0.0324***	0.0086	3.75	0,000
R ² = 0.5026		Wald chi2(10) = 51.88		Prob > chi2 = 0.0000

Note: ***, ** and * represent respectively the significance at 1% level, 5% level and 10% level.

Reading this result (Table 4), we found that the coefficient of determination (R² = 0.5026) indicates a good specification of the model. We can conclude that our model has a good linear fit quality. At the 5% level, the regression is globally significant because the value of the probability associated with the chi2 test is 0.0000, a

value which is less than 0.05. Thus, the credit risk is explained to 50.26% by the explanatory variables of the model. The coefficients of the variables of the model, have for the majority the expected sign with the exception of four (4) variables namely the concentration of the banking sector (CoB), the interest margin (MaI), the ordinary credits (CrO) and the size of the board of directors (TCA). In addition, it should be noted that among the four (4) variables with the opposite sign, only the coefficient of the variable "MaI" is significant.

5. Discussion

The GDP growth (variable "CrE") was included in our analysis to see the effect of the real economy on credit risk. It therefore appears that there is a negative relationship between the GDP growth rate and the credit risk. That is, the improvement in the real economy is leading to a reduction in the non-performing loan portfolios of commercial banks. This result corroborates the work of Salas & Suarina, 2002; Fofack, 2005, Jimenez & Saurina, 2006.

With respect to the "CrS" and "MaI" variables, table 4 shows that the latter significantly explain the evolution of credit risk. The sign of the coefficient of the variable "CrS" is positive. So, there is a positive relationship between this variable and the evolution of unpaid bills. This means that, the higher the level of signed commitments, the more the banking institution runs the risk of seeing the loans granted not returned. Indeed, the result shows that a 10% increase in credit by signature increase unpaid bills of 0.078 units. This result could be justified by the fact that the implementation of "signature credit" does not result in immediate outward payment and very often not at all. For this purpose the bank is tempted to accumulate its commitments in order to make the largest savings possible. Thus, in an unfavorable economic environment, such credit is therefore compromised. Because, the risk is difficult to evaluate, the follow-up of the commitments is heavy to manage and there is often shift of the commitments over time (which can be very expensive for the banking institution in case of failure of its customers).

Regarding the interest margin, it is significant with a sign opposite to the expected one (Positive). An increase in the interest margin of 10% will reduce the credit risk by 0.07 points. This seemingly surprising result is explained by the notion of credit rationing developed by Stiglitz and Weiss (1981). Indeed, the bank as a funding intermediary faces many sources of information asymmetries. Thus, it is difficult to distinguish between honest and dishonest borrowers. However, in the absence of being able to set an interest rate that corresponds to the actual risk of the project, the bank applies a rate reflecting the average quality of the borrowers. There is a maximum interest rate threshold which corresponds to a better diversification of the banks' loan portfolio and to a maximum expected profitability. As a result, beyond this threshold, there is a decrease in the expectation of profitability due to the deterioration in the quality of borrowers. So, if in Benin Republic, the fixed interest rate is below this maximum threshold, it is normal that any increase in the interest margin increases the expected profit of the banks and, in turn, the decline of unpaid (income effect > risk effect).

The result of the estimation shows that the proportion of institutional administrator "AIn" negatively and significantly affects the credit risk. The variable "AIn" has the expected sign and its impact on the credit risk is significant at 10 level. In addition, its coefficient of -0.0030789 means that a 10% increase of the institutional administrator leads to a decrease of about 0.03 credit risk unit. This result is justified by the fact that institutional administrator are experts who can exercise more effective control of the executives, since they hold (i) significant capital shares, (ii) they are independent of management, (iii) support high control costs and (iv) are also motivated to exercise their power of control over managers in order to guarantee their wealth. Our results contradict the work of Coffee (1991), Pozen (1994).

6. Conclusion

This paper examines the predictive factors of credit risk in the Beninese banking landscape. Thus, from a sample of seven (07) commercial banks (of which only one listed on the BRVM) during the period 2004-2013, we tested the combined effect of external and internal factors on credit risk. Using a balanced panel econometric analysis method, the fixed effect model was estimated by the PCSE method. The study shows that annual GDP growth, credit by signature, interest margin, and the proportion of institutional administrator are the predictors of credit risk. So, political authorities and bank officials could improve credit risk management by formulating policies around these factors. For example, consider increasing the size of the board by focusing on the proportion of institutional administrator.

However, one of the limitations of the empirical analysis conducted in our research is that the sample size is relatively small. Similarly, regarding the measurement of credit risk, we could have used the cost of risk (the loan-to-credit ratio / net credit total).

A comparative study with some UEMOA countries, in particular Ivory Coast, would be interesting. Because, in recent years, Ivory Coast has been able to reduce its bad debts and align with international standards. The study of the factors that influenced the risk management of Ivorian banks will enable us to identify the shortcomings of the Beninese banking sector and to try to provide the appropriate solutions.

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