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Welcome Note from the Editor-In-Chief:

It is our pleasure to present to the Volume 16, Number 5, 2016 issue of the International Journal of Business Research (IJBR). This issue contains research papers that have met the criteria of the peer reviewers from universities around the world.

In keeping with its nascent tradition of promoting all forms of intellectual inquiry, including that conducted outside the box, the current issue proposes to its readers, the findings of research in a verity of business and economics areas.

We thank all authors for the quality of the manuscripts they submitted to our review and for trusting IJBR to be the medium to share it with a truly global audience. We praise the scholars who volunteered their expertise to review these intellectual contributions.

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We invite you to give us some feedback. If you have suggestions for future improvement, we'd like to hear from you. As usual, we hope to have the privilege of reviewing your work in the near future. Consult IJBR deadlines and guidelines at our website.

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We look forward to a challenging but bright future for IJBR, with your help.

Best wishes!

Timothy Mantz,

DBA, Dean School of Business, Associate Dean of the Graduate School, Keiser University

Editor-In-Chief

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KEY FACTORS AFFECTING THE ACHIEVEMENT OF THE SME'S PERFORMANCE: THE RELIGIOSITY PERSPECTIVE

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[dx.doi.org/10.18374/IJBR-16-5.1](https://doi.org/10.18374/IJBR-16-5.1)

ABSTRACT:

There are various approaches has been explained by previous researchers. Generally, some researchers has been explain the entrepreneurship concept based on the process and behavior approach. All of that approach has been widely accepted and many researchers that reinforces the argument by pointing out that the process approach and behaviour is owned by entrepreneur will determine the performance. However, some previous researchers also shown that SME's performance can be affected by another factors. From this description, might be able to trace another factors that determine of the SME's success. In develop entrepreneurship concept, we based on some previous study. for example, Driver (1976); Proctor (2006) state that individual beliefs described in how they interpret the religion embraced. Therefore, the purpose of this article is to explore some factors that determine the SME's performance based on religiosity perspective.

Keywords; SMEs, performance, religiosity

1. INTRODUCTION

Entrepreneurship is an interesting field for the examined. In the last decade, there is increasing numerous studies about the theme of entrepreneurship (Gibb, 1992). We conclude that the increased amount of research about entrepreneurship due to complexity of this field, so that it can potentially cause problems. There is some problems faced by SME's in carrying out business activities to provide opportunities for academic development and will hopefully be applied by entrepreneurs. Hankinson, *et al.*, (1997) found that there is some weakness of SME's in carrying out business activities, including the behavior and lifestyle, abilities and skills, management methods are used and the entrepreneur motivation. In the next explanation, the researcher assumed that there's some components as a key factors that will be affect on the SME's performance.

Another perspective describe that the SME's performance also caused due to weak entrepreneurial culture (Altinay and Altinay, 2008). In the context of the culture, the individual who decided to become an entrepreneur will show the characteristics and behaviors that will have an impact on the achievement of performance (Morrison, 2006; Lindgren and Packendroff, 2009; Luke, *et al.*, 2011). the individual culture will be lead to the interaction with social environment, so that they will be gain an ideas and inspiration. Furthermore, it will enhance the creativity and innovative thinking, and will be strengthen entrepreneurship behavior. In addition, the culture can also shape the mindset of the individual to become an entrepreneurial. Some researchers argue that the decision of individuals to become entrepreneurial are driven by cultural factors, indicate a process (Downing, 2005; Mills and Pawson, 2006; Bull, 2008; Jones, *et al.*, 2008). Thus, cultures can show two perspectives of entrepreneurship, there are behavior perspectives (Miller, 1983; Covin and Slevin, 1991; Zahra, 1991), and process (Mintzberg, 1973; Stevenson and Jarillo-Mossi, 1986; Lumpkin and Dess, 1996).

Clearly, the literatur study describe that the success of a business depends on how of the firm's ability in determining strategic position, where the corporate resource, capability and competence, and what's the components that will affect the achievement of superior performance (Thompson, 1999). By this step, the firm will find a way to produce a different product with a competitor, pressing prices impact on low supply and creating some form of competitive advantage. In its implementation, capabilities and competencies that are owned by the firm can be done in the form of creating innovation, developing a market or use technology in their operations. However, previous research indicated that SME's have a number of

limitations, such as the weak capital, low access to the markets, so it cause difficulty to the development process or the creation of markets, also they have a low quality of human resources (Hankinson, *et al.*, 1997; Gaddefors, 2007; Tipu and Arain, 2011; Cassia, *et al.*, 2012). Based on that explanation, we argue that the implementation of the business strategy of SME's may be difficult to be done. Therefore, we try to searching about some of the key factors that will be affect to the SME's performance, in which it will be used as the foundation for entrepreneurship concept development.

Generally, the empirical studies that demonstrate the significance of the relationship between the theory of entrepreneurship, both from the perspective of behaviour or process, with the achievement of the performance has been widely accepted. However, we argue that the entrepreneurial theory can be developed by tracing other determinants that will determine the achievement of performance. While some authors (such, Rafiq, 1992; Smallbone, *et al.*, 1999; Altinay and Altinay, 2008), using cultural variables that will affect the SME's performance, then they will linking it with the beliefs espoused. Furthermore, some authors state that beliefs has been closely related with religious (Driver, 1976; Proctor, 2006). They have an argumentation that the individual beliefs can be described as the capability to religiosity interpretation. In other words, a beliefs will be drive the individual behavior to interact with social environment. Included in this context is the individual belief to encourage them become an entrepreneurial (Audretsch, *et al.*, 2007). Included in this context is the individual belief to encourage them become an entrepreneurial, and furthermore, they will uses it to run a business activity (Fritz, 2006; Carswell and Rolland, 2007). Other empirical studies also explained that a business that is conducted on the basis of religion will be able to achieve superior performance (Iannaccone, 1998; Naughton and Cornwall, 2009; Patwardhan, *et al.*, 2012).

Actually, the development of the entrepreneurship concept based on religion perspective has been done by some previously authors (such, Shane and Venkataraman, 2001; Antoncic and Hisrich, 2003; Halis and Ozsagir, 2007; Zulkifli and Rosli ,2013; Arief, 2013). They put the argument that individual religiosity will be encourage a behavior, thus they use it to run the activity business. Furthermore, the authors explained that some behavior that shown to run the business activity are honesty, ethics, morals and appreciate other people's. In practice, that behaviors are considered as the key to success in interacting with the environment so that it will impact on the achievement of a superior performance. For example, study conducted by Morrison (2006) explains that the individual moral being one of the keys in the face of environmental changes. Furthermore, Proctor (2006) explains that the moral would be a primary source in stabilizing neighborhoods. But, other study has found that the environment is a factor that will influence the demand and considered to be very important in determining business development (Castogiovanni, 1991; Hill, 2001). Therefore, a dynamic environment will cause a change in the behaviour of individuals, either in the form of a decision to become an entrepreneur or the way that can be done to develop the business.

Based on the above explanation, the development of the entrepreneurship concept can be done by using the religiosity perspective. Nonetheless, we're assume that the other entrepreneurial perspective also very important in creating a superior performance. For example, a perspective that focuses on innovative behaviour, ability to exploit and explore opportunities, ability to take risks, create new markets, increase motivation and devise business strategies, is a very important component in achieving performance. But, we argue that the achivement of superior performance gained from innovative, proactive behaviour and dare to take the risk, it may be hard to do by small businesses, because they have some limitations. Through this article we try to develop another side of the SME's performance achieve from the others perspective, there is religiosity. Some of religiosity components will be affect the broader perspective the achievement performance of SME's will also be discussed in this article.

2. RELIGIOSITY: THE CONCEPT AND THEORY

Every human being having the religiosity values. This values will be used to shows the behavior daily, especially when they interact with the social environment. Based on study literature, Taylor, *et al* (1999) explain that constructs of religiosity is a complex phenomenon, encompassing behaviors, attitudes, beliefs, feelings and experience. Ontologically, religiosity can be explained by a number of approaches,

namely theology, sociology and psychology (Iannaccone, 1998). In theological approach, McDaniel and Burnett (1990) explain that religiosity as the faith that a person has in God. Religiosity can also be translated as something metaphysical in nature or related to the achievement of the purpose of life from someone solely because of the God's existence (Rahner and Vorgrimler, 1981). From that argumentation above, we contend that religiosity relates to something that is absolute, where's the God is the source of all power. Without eliminating the role or activity conducted by human, what is individual experienced is the God's will, and they cannot afford to shy away from the whim. In some religions, it's called destiny. As a philosophical, Kant (1791) explains that destiny is related to some things that are good and bad. That explanation has been meaningful that destiny is not contrary to the doctrine which is on every conviction. For example, there's 6 Pillars of Faith in Islam, whereby one of which states that every muslim must believe with destiny set by God. The destiny of beliefs has meaningful that someone to trust and believe that God made all of creatures by nature and His wisdom. Thus, this approach places emphasis on a person's ability to interpret the religion with always remembering of their God, afterward His essence must be worshipped and glorified.

From a sociological approach, Weber (1958; see, Audretsch, *et al.*, 2007) explained the religiosity concept with state that *"If the stability of the caste order could not hinder property differentiation it could at least block technological change and occupational mobility, which from the point of view of caste were objectionable and ritually dangerous"*. This indicates that the sociology approach emphasis on a person's ability to show firmness in the interpret religion embraced through attitude, behavior and good beliefs. That argument has been mean that the greater person commitment in respecting of religious values will be impact to greater attitude and behavior. In contrast to the theological approach, this approach can still be developed because of the relative degree of person commitment in respecting of religious values can be measured. The concept of person commitment to the religion has been development by some authors, such as Himmelfarb (1975); Stack (1983). from that development, the authors has been shown some dimension of a person's ability to interpret the religion professed. They call it religious involvement. Theoretically, they explained that a person's ability to interpret the religion embraced depending on the extent of their religious orientation level. This theory explained that religious involvement has four orientation, including supernatural, communal, cultural and interpersonal. Furthermore, each of the described orientation through nine typology that can be used as a guide for a person in carrying out the life daily, covering the devotional, doctrinal, experiential, affiliational, ideological, intellectual esthetic, affectional, ethical and moral.

Table. Summary Scheme : Dimensions of Religious Involvement

| OBJECT OF ORIENTATION | TYPE OF ORIENTATION | | | |
|-----------------------|---------------------|---------------|------------|--------------|
| | Behavioral | | Ideational | |
| Supernatural | 1. | Devotional | 2. | Doctrinal |
| | | | 3. | Experiential |
| Communal | 4. | Affiliational | 5. | Ideological |
| | a. | Associational | | |
| | b. | Fraternal | | |
| | c. | Parental | | |
| Cultural | 6. | Intellectual | – 7. | Affectional |
| | | esthetic | | |
| Interpersonal | 8. | Ethical | 9. | Moral |

Source : Himmelfarb (1975), Measuring Religious Involvement

Another approach that can be used to clarify the concept of religiosity is psychology. In psychological theory, religiosity demonstrates of individual ability to apply the belief that in the life daily. Through this approach, the analysis focuses on the psychological level of religiosity that is owned by an individual and then religion will play a role as a determinant of social change component (Miller, 2002). Technically, Reynolds (1995) suggests that the factors that will affect a person's psychology in implementing religiosity is the belief that the performance achievement was heavily influenced by activities that have been undertaken and are always positive thinking from the decision that has been taken. That explanation indicate that in psychology approach, the concept of religiosity was cast as a determinant of a person's

mindset that is manifested in a form of behavior. In other words, the psychology approach will drive a person to doing an activity which will change the social values of the person. This is difference understanding between sociology and psychology approach. If in the sociology approach, someone will do a behavior change based on community or social conditions that already exist (it's called society driven), then a psychology approach will change the behavior of a person based on the patterns of thinking that belong (it's called internally driven).

3. DETERMINANT OF ENTREPRENEURSHIP ACTIVITY

Entrepreneurship suggests organizational behavior (Antoncic and Hisrich, 2003; Zhao, 2005). Based on the management perspective, entrepreneurial characterized by the ability possessed by individuals to shows an innovative behavior, creating new business and develop a business (Antoncic and Hisrich, 2003). That explanation strengthen arguments advanced by Cunningham and Lishcheron (1991) that an entrepreneur should have the ability to manage of business and dare to take risks. This is based from arguing that the development of innovative behavior will determine the business success in environmental dynamics (Miller, 1983; Covin and Slevin, 1991; Miles and Arnold, 1991; Naman and Slevin, 1993). In other words, the increase of innovative behavior, proactive and courage in taking the risk of an entrepreneurial will determine the achievement of better performance. However, another study found that it's difficult for SME's to shown the innovation behaviour Dobbs and Hamilton (2007); Cassia, *et al.* (2012). In the fact, in carrying out its business activities, SME's tend to be shows conservative and traditional behavior. In addition, SME's tend to prefer to conduct activities in partnership with a bigger company in the face of environmental changes and feel more comfortable with the conditions that exist at the moment.

Entrepreneurship is a dynamic concept. The various perspectives can be incorporated as components that will determine the achievement of performance. In this regard, we agree with the explanation of Hill (2001); Antoncic and Hisrich (2003) that an entrepreneur must have something unique, have a good attitude, strong convictions and conducts business activities to meet their needs, so that it will be distinguish between an entrepreneur with another. In a broader scope, entrepreneurial activity is not limited to the generate profits ability, but also how they can thingking about benefit. That is, uniqueness, attitudes and beliefs that are owned by an entrepreneur should be able to provide material or non material gains. Such explanations reinforce the opinion of Morris, *et al.* (1996); Venkataraman and Sarasvathy (2001); Luke, *et al.* (2011) by stating that entrepreneurial activity component should include the cost of the benefits in the form of the creation of social welfare for the society.

In addition, the entrepreneurial activity is also related to a person's ability in drawing up the strategy. In this respect, we agree with the argument of the authors that the existence of strategy indispensable to all business activities, both in the sphere of small business as well as large scale businesses. With strategy, then the firm can be identify the situation and external environment so that it can create and exploit the business opportunities (Glancey, *et al.*, 1998; Kickul and Walters, 2002; Segal, *et al.*, 2005). Entrepreneurship is part of a business activity whose main purpose is to create opportunities. Therefore, the existence of the strategy is indispensable for the entrepreneur in the face of environmental changes. In addition to creating opportunities, some authors suggest that the strategy will provide the benefits to SME's in determining the market position, particularly in defining a niche market that is not accessed by other companies. (Bradburd and Ross, 1989; Wingham and Kelmar, 1992), achieve competitive advantage (Hitt, *et al.* 2001) as well as produce a leadership product (Porter, 1980). Even so, questions that might be raised in response to the issue of the importance of strategy for SME's in the face of environmental dynamics is the extent to which the activity that has been performed by the entrepreneurial, how can they devise strategies that can be used to persist and how they can benefit from the resources owned ?

Literature study shows that SME's development was greatly influenced by several factors, such as individual characteristics (Bird, 1989; Littunen, 2000), motivation (Kuratko, *et al.*, 1997) and entrepreneur competency (Bird, 1995; Man and Lau, 2005). Smallbone, *et al.* (1995) explains that personal characteristics arise because of the dominant character of the individual. The dominance of individual

characters can be manifested in the form of the creation of the creativity and the next it will show individual innovative behaviour. Studies conducted by Fai Hui, *et al.* (2006) explores the attempts of creation of individual creativity in the form of innovative behavior. In this studies, authors explained that someone with a high innovative behaviours tend to be more courageous in taking risks, have high initiative in conducting an activity as well as having role as the strategy conductors. In addition, they also had the ability of doing better business management and always think to create a new development, new strategy, new products and services.

Entrepreneurial motivation play an important role to creating and developing a bbusiness. Entrepreneurial with a high motivation are likely to accept the risks faced, so they will gain a direct benefit in achieving business success. Of course, to gain this benefit they will have to offset with maximum effort. In the studies conducted, Glancey, *et al.* (1998) suggests that the existing limitations on SME's, such as the absence of a clear organizational structure, causing business owners have a high motivation to develop his business. Even so, from the results of searches that have been conducted, some researchers assumed that entrepreneur motivation related with the venture creation process and not in the enterprise development process (Hankinson, *et al.*, 1997; Glancey, *et al.*, 1998; Mazzarol, *et al.*, 1999; Segal, *et al.*, 2005; Cato, *et al.*, 2008). For example, Hankinson, *et al.* (1997); Segal, *et al.* (2005) explained that one of the considerations of someone being entrepreneurial is due to dissatisfaction in previous employment and the existence of a greater opportunity to pursue in this field. Whereas Glancey, *et al.* (1998); Mazzarol, *et al.* (1999) explain that the economic factor as a trigger for individual to be an entrepreneur. Regardless of what's motive and purpose are used, motivation is a having an important role in determining a person's choice to become entrepreneurial.

In another perspective, Penrose (1959) explained that in addition to the individual characteristics, the source of the achievement performance for SME's also determined by the skills and experience that are owned. Littunen (2000) mention that individual skills and experience will be sharpen the values and attitudes of an entrepreneur, so they have the ability to take risks, demonstrate innovative behavior, understand how the function of the market, understand the marketing activities and business management as well as being able to form a network of cooperation with the other company. However, other studies show that SME's have many limitations, one of which is the low quality of human resources which are owned, such as low levels of formal education, motivation and competence (Zhang and Burning, 2011). These limitations cause they have a weak managerial skills, slow to taking a decision, not courage to take a risk and less innovative, so that they are unable to draw up a strategic plan in an effort to expand the business. It have an implication that a SME's limitations in running business activities was only routine activity and just to show the existence. Furthermore, it can say that there's not a real action to develop a business.

Factors Determining **SME's** Performance

Optimal performance achievement is the ultimate goal of a business activity. Not regardless of how scope, type of business or business category, every business will surely strive to achieve superior performance. Theoretically, some of the authors have explained the factors affecting the achievement of superior performance with a various perspectives. In the SME's scope, Hankinson, *et al.*, (1997) explains that there are four factors that will affect the achievement of the performance, that is, behavior and life style, skill and capability, management methods and motivation. The author restrictions showed that skills, capability and management methods to be determinants in the achievement of the SME's performance. We argue that the skills, capability and management methods showed a pattern of person's behavior. Skills and capability involves a social process describes on how one can interact with existing social pattern (Lowe, 1995). Furthermore, the skills and capability will be drive a culture so that one can build a relationship with the business community. Simply put, skills and capability demonstrated managerial and leadership abilities of a person. On the one hand, management methods describes the cognitive ability of someone who combines technical ability and individual characteristics.

That explanation was reinforced with the argumentation from Glancey (1998); O'Gorman (2001); Schindehutte and Morris (2001); Schwartz, *et al.*, (2005) which suggests that the achievement of the SME's performance determined from the behavior exhibited by the owner in the form of strategy formulation. For example, O'Gorman (2001) explains that the entrepreneurs ability in arrange a strategy

will be a determinant in the achievement of the performance. Whereas Schindehutte and Morris (2001) suggests that the entrepreneur ability in arrange a strategy will be increases the competitiveness so that it will generate the harmony between the organization and the environment. When organizations able to adapt with environment changes, then they will achieve a superior performance.

Other researchers also mentioned that achieving the performance of SME's are strongly influenced by innovative behavior. Innovation is a fundamental tool that can be used by entrepreneurs in identifying and exploiting opportunities of environmental change. Innovation is a concept that combines the knowledge possessed by a person with technical ability, and both combination would resulting a new concept. However, we argue that the individual knowledge in generating new concepts should be relate to the competencies possessed. That is, someone who focus on a specific field on a relative basis will have an innovative behavior taller compared to people who are likely to focus on several fronts. The reason, innovation not limited to efforts to develop a concept, but it also deals with technical. This was confirmed by the opinion of Cassia, *et al.* (2012) that the innovations undertaken should be based on the ability and competence of a person in order to be able to generate business success. Therefore, we consider that the technical capabilities serves as a supporting factor in the process of creating a new design concept.

In addition to innovation, another factor that may affect the achievement of the SME's performance is proactive behavior. Proactive behavior is an attempt to explore opportunities, with characterized through the introduction of new products and services in the face of competition and doing an activities with anticipate the level of demand in the future (Rauch, *et al.*, 2009). Proactive behavior is also expressed as the ability of a person to devise a flexible planning system in an effort to create the opportunities (Lau, *et al.*, 2012). The proactive behaviour consequences for entrepreneur is they should be able to implement activities with a more flexible and constantly change the orientation. Furthermore, they must be able to measure or determine that the activity constitutes a primary foundation for organizational development. While the change of orientation with regard to the ability of the entrepreneur to provide a response to environmental change. In responding to environmental change, entrepreneur can use proactive or reactive approach. Proactive approach consists of entrepreneurial ability to further sharpen the competition environment with more emphasis on the creation of excellence, whereas the reactive approach consists of the ability to respond to environmental changes by doing the changes rather than exploiting existing resources. Regardless of what shape the approach used, the impact brought about by the implementation of activities that are more flexible and change the orientation of the entrepreneur is to achieve a better level of performance.

However, another study suggests that determinants of SME's performance achievement not only determined entrepreneurial ability in the use of management methods, the determination of strategy, level of competence which is owned as well as innovative and proactive behaviour shows, but is also determined by other factors. Some researchers, such as the Weaver and Agle (2002); Altinay and Altinay (2008); Arief (2013); Zulkifli and Rosli (2013) suggests that a person's religiosity level was also instrumental in the achievement of the SME's performance. The argument put forward is religiosity will establish good behaviour, so that the decisions taken are likely to be more beneficial for others than himself. When they run the business activity, then the performance achieved will also be better. Empirically, the study conducted by Pearce, *et al.* (2009) found that religious organizations would be able to move effectively a combination of innovativeness, autonomy, proactiveness, competitive aggressiveness and risk taking and later will have an impact on achieving superior performance.

4. THEORY DEVELOPMENT: NEW THEORIES AND CONCEPTS

An epistemology, the implementation of the entrepreneurship concept will be involve interactions between one individual with another. Some of them also perform interaction with the organization. With the literature abd empirical studies, we try to track back the implementation of entrepreneurship which related with the individual behavior. From this, we concluded that an important factor in the application of the concept of entrepreneurship is how someone can point out the behavior that can provide benefits to others. Therefore, one of the challenges faced by the individual in carrying out entrepreneurial activity is how they can demonstrate good behavior, particularly in conducting business activities.

In the theory of entrepreneurship, individual behavior has become a main research. Several researchers have studied many concepts of entrepreneurship with the primary focus on individual behavior (Miller, 1983; Covin and Slevin, 1991; Zahra, 1991). Generally, the individual behavior in carrying out entrepreneurial activities will have an impact on the achievement of performance. Nevertheless, the development of entrepreneurial theory continued to experience increased. Some researchers have tried to develop a theory of entrepreneurship with a various perspectives to indicate the extent to which the development of this theory has been done. Entrepreneurship theory development depends of how researchers use the assumption of a phenomenon faced by the entrepreneur, and next they do development through relevant concepts and theories. For example, Glancey (1998); O'Gorman (2001) explores the economic environment dynamics as a source of the achievement SME's performance. The perspective used is with the changing economic environment how SME's can achieve superior performance. Therefore, the development of entrepreneurial theories focused on the extent to which business owners can increase the motivation to not just survive, but also to achieve superior performance. In particular, the development of entrepreneurial theory emphasizes on the importance of SME's to develop planning strategy as a component that can be used to deal with changes in the economic environment.

In another perspective, the theory of entrepreneurship has also been developed with cultural approach. The assumptions used by the researchers in developing a theory of entrepreneurship based on culture is this component can serve to help someone to understand and interpret the problems faced (Kirk, 1998; Morrison, 2006). Culture also serves as a tool to enhance the capabilities of individuals in a revamp and strengthen the position of competition through the adjustment of the organization's activities with environmental change (Thompson, 1999). Nonetheless, some researchers still question the focus of entrepreneurship theory development through cultural perspective. The problem will arise when we questioned the antecedent of individual culture. Or rather, how the culture able to construct an individual or a group of communities so that they are able to demonstrate behavior and good attitude so that the organization can achieve superior performance. Through these assumptions, we try to develop the concepts and theories of entrepreneurship with the perspective of religiosity.

Naturally, every human being has a personality that contributes in forming attitudes, needs, beliefs and characters (Henry Loebowitz and Riessman, 1946). Furthermore explained that the existence of the individual will help them to diagnose and understand the dynamics that exist and realize the importance of embracing a religion. That explanation indicates that religion serves as a dividing line that will determine the attitude and behaviour of the individual in carrying out the life daily. When religion can run its function form the attitudes and behavior of individuals, then within a certain period will be a culture. In the end, a culture that is owned by the individual will be applied in the business activities and transformed to employees.

Thayeb (1988), cited by Morrison (2006) reinforces that explanation above by defining culture as follows; [...] a set of historically evolved learned values, attitudes and meanings shared by the members of a given community that influence the material and non-material way of life. Members of the community learn these shared characteristics through different stages of socialization processes of their lives in institutions, such as family, religion, formal education, and society as a whole.

Furthermore, Lissovoy (1954) reaffirms the argument with state as follow:

" . . Knowledge about religion is essential for a full understanding of our culture, literature, art, history, and current affairs."

" . . If need be, teachers should be provided with special help and information to equip them to teach objectively in this area."

That explanation indicates that when an individual has a certain religion embraced, then they will form a community with the society. The community formed having a similarity of beliefs, vision and goals of the individual will be applied to the life daily. We assume that at this level, the individual will exhibit behavior that reflects the attitudes and beliefs that are embraced. At the next stage, the characters are formed from the religion professed and has been accepted by the community will be a culture. The presence of a person who understand about religion has also become a cultural transformation process to others.

Therefore, Lissovoy (1954) explained that knowledge about religion became an important component in understanding the culture embraced by a person or community. How the development of the theory of the concept of entrepreneurship and religion?

Studies conducted by Audretsch, *et al.* (2007); De Noble, *et al.* (2007); Agbim, *et al.* (2013) clarify our argument that the beliefs held by individuals will bring them to be an entrepreneur. In fact, we argue that the entrepreneur who emphasis on beliefs embraced will be reflected into the life daily thus it will be the source of uniqueness that can create value in carrying out business activities. That value can be created from the application of the attitude and behaviour that really appreciate other people, giving priority to honesty, moral good and always put forward the ethics in business. Even so, we limit the scope of application of the entrepreneurial activity in the religion. This means that not all individuals who embraced religion can show the attitude and behaviour that uphold honesty, morals and ethics. In our opinion, only individuals who have a high level of religiosity which can implement the attitudes and behavior. Therefore, the higher a person's level religiosity, the attitudes and behaviors that are demonstrated in the entrepreneurial activity will also be higher (Longenecker, *et al.*, 1998; Weaver and Agle, 2002; Williamson, *et al.*, 2007; Hamid and Sa'ari, 2011). In the end, the degree of individual religiosity on entrepreneurial activity will be impact on the achievement of economic performance (Barro and McCleary, 2003; Noland, 2005; Galbraith and Galbraith, 2007; De Jong, 2008), also the firm performance (Pearce, *et al.*, 2009; Nwankwo, *et al.*, 2012; Arief, 2013).

5. CONCLUSION

Theory of entrepreneurship have experienced growth, both in terms of definitions, concepts and methods. During this time, the development of entrepreneurship theory by some researchers has been widely accepted and have been tested for their significance. In this article, we try to develop a new theory about the concept of entrepreneurship based on previously existing perspective. The basic assumption that we use in developing the concept of entrepreneurship is done with the approach of ontology and epistemology, through the mechanism of the explanation and the meaning of constructs and the consequences for constructs which have been proposed. To develop a theory or concept of entrepreneurship, we use the approach of religiosity and their impact on the achievement of the SME's performance.

In the process of developing a theory or concept of entrepreneurship, we interpret the religiosity as a factor that will determine the achievement of SME's performance. Assuming that we use in using constructs religiosity as a factor that will affect the performance of SME's based on the approach to theology, sociology and psychology. During the period, the development of the entrepreneurship concept have be done through sociological approach (Lissovoy, 1954) and Psychology (Henry Loebowitz and Riessman, 1946; Reynolds, 1995; Miller, 2002). On the one hand, the theological approach still very rarely done by researchers in relation to entrepreneurship activity. This is contrary to statements made by Anderson, *et al.* (2000) that the approach to theology that demonstrates the relationship between the company's ideology with religion is a very interesting field for review. We suspect that the difficulty of measuring the degree of individual religiosity from the theology perspective caused a weakness to development of the concept of entrepreneurship from this perspective . A theological perspective emphasizes belief someone against to the God.

Based on the above explanation, the development of theory or concept of entrepreneurship through the religiosity perspective that we do is predicated on the approach to sociology and psychology. Nevertheless, we also anticipate the theology approach, which according to us output resulting from this approach also have in common, there are attitudes and individual behavior. In particular, the perspectives of religiosity can be associated with the process of cultural transformation, such as the application of an innovative and proactive behavior, with emphasis on factors of honesty, moral and ethical, so hopefully can generate superior performance. In particular, the perspectives of religiosity can be associated with the process of cultural transformation, such as the application of an innovative and proactive behavior, with emphasis on factors of honesty, moral and ethical, so hopefully can generate superior performance. Nevertheless, the development we were doing from the concept of entrepreneurship based on the various

fields of science, so we need to determine the follow-up of the process of future development in other ways.

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A METHODOLOGY TO TEST VIABILITY OF AN INTEREST RATE COMMISSION AGENT BANKING SYSTEM (AIRCABS)

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[dx.doi.org/10.18374/IJBR-16-5.2](https://doi.org/10.18374/IJBR-16-5.2)

ABSTRACT:

This research presents a stepwise description, explanation and prediction of dependent and independent variables in developing empirical methodology to test the viability of an interest rate commission agent banking system (Tessema and Kruger, 2015). It is a system adopted by the bank to be an agent for investors' loan funding to entrepreneurs getting the fund seller and buyer agreement to administer the loan after disbursement by retaining reasonable interest rate commission from the agreed investors' loan funding credit price. Although no empirically tested bank intermediation model has been published, the researcher considered Primary data using structured survey questionnaires from a sample population of 300 bank's professionals and ten years financial statements published in the period from 1 July, 2006 to 30 June, 2016, of one government bank and 16 private commercial banks in Ethiopia. To test the research hypothesis, canonical correlation and a multiple logistic regression statistical tools considered and to analyse the survey questionnaires Cronbach Alpha was used.

Keywords: Financial crises, Investor loan funding, discrete interest rate, interest rate commission agent banking, Banking Model

1. INTRODUCTION:

In traditional banking activities, banks are limited to buying deposits from clients to sell to entrepreneurs at the credit price, whereas, in non-traditional banking activities, banks are involved in selling their service to their client according to the terms and tariff of the bank.

Bank as financial intermediators safeguards customer deposits and use it for loans by paying deposit interest rate into the depositor's account. The loan disbursed to the borrower must be returned within the time specified in the loan contract. If the borrower defaults, the bank sells collateral pledged for the loan and other attachable properties of the borrower to collect the amount of the debt.

As the number of defaulters increase, the bank cannot repay the depositors' deposit amount with accrued interest which could result in bank run. Since the bank uses the savers' money to generate interest income, its liquid cash is always less than its loan portfolio. This makes the bank susceptible to credit risk and liquidity crunch which in turn causes bank crises. Although the banking structure changed through competition, their functions are stable (Merton, 1995). The main fact of this problem is that banks have not yet developed alternative banking intermediation model by which they can transfer credit risk and continue to maximise their profit and sustainability. Therefore, the bank's function of buying deposits from savers and selling it to borrowers considering it as an asset on the balance sheet exposed to problems that limit the bank's ability as intermediary to obtain continuous sufficient fund from depositors.

In order to solve banking crises that emanates from credit risk and liquidity crunch, an interest rate commission agent banking business model was developed (Tessema & Kruger, 2015). The model is designed to enhance bank profitability and sustainability by transferring credit and liquidity risk to investors and entrepreneurs, and administer investor funds disbursed to entrepreneurs by collecting interest rate commission from the credit price and project selection fee from investors until the loan is settled.

1.1 Problem statement

An interest rate commission agent banking system that is designed to solve financial crises emanating from bank's credit risk, liquidity crunch and resulting in bank failure has not yet been empirically tested to explore the model's viability (Tessema & Kruger, 2015).

1.2 Research Hypothesis

The study explored the research approach, methodology and process to test the following research hypothesis:

H0: Credit risk and liquidity crunch have no positive effect on an interest rate commission agent banking system in administering investors loan funding to entrepreneurs

H1: Investors' loan funding has a positive effect on profitability and sustainability of an interest rate commission agent bank

H2: Discrete market interest rate incentive has positive effect on stable deposit mobilization in case of an interest rate commission agent bank finance an entrepreneur which later shift to agent position when depositor need to be an investor.

The relationship between independent and dependent variables is depicted in Figure 1.

1.3 AIRCABS Model

An interest rate commission agent banking system (AIRCABS) is a system adopted by bank to be an agent for investors' loan funding to entrepreneurs by including seller and buyer agreement that the loan would be administered after disbursement by retaining reasonable interest rate commission from the agreed investors loan funding credit price. Increasing the deposit interest rate increases deposit mobilization. Similarly, increasing the credit price will increase the demand of investors to provide loan funding which in turn increases the bank's loan mobilization. Tessema and Kruger (2015) recommend that to adopt an interest rate commission agent banking system, banks should develop the following lending strategies:

1. *360-degree lending strategy*: This strategy involves investor and entrepreneur known to each other and agent bank. Investor and entrepreneur go to agent bank at the same time. An investor can fund a loan to an entrepreneur by selecting an entrepreneur's project through an interest rate commission agent bank with or without pledging entrepreneur's collateral. Should an investor wish to collect the funds disbursed to entrepreneurs, the agent bank sells the loan to another investor who has an interest to invest in same entrepreneur's business. Similarly should the entrepreneur fail to pay as agreed, the agent bank rents the business to another entrepreneur who has the capacity to manage the business and settle the loan without having ownership of the business. However, ownership can be transferred to the second entrepreneur by the will and approval of the investor and the bank. Therefore, the loan revolves from investor to entrepreneur and until it is settled, the bank collects interest commission from the investor.

2. *180-degree lending strategy*: This strategy involves an investor and an entrepreneur who do not know each other nor the bank. Investor and entrepreneur go to the agent bank at different times. With this lending strategy, an interest rate commission agent bank selects entrepreneur's project to finance through an investor. In selecting an entrepreneur's project, the bank charges an investor project selection fee. In this case, investor loan funding requires pledging collateral to ensure that the bank collects the disbursed funds if the entrepreneur fails to repay the loan.

3. *90-degree lending strategy*: This lending strategy involves the fund provider and the bank. With this lending strategy, the fund provider is money depositor who later shifts all or part of the fund for investment to fund entrepreneur's project through an agent bank to collect the partial or full credit price. Otherwise, the investor sells the fund to the bank to collect a discrete market deposit interest incentive according to the deposit increment level.

These lending strategies are designed to shift credit risk and liquidity crunch to investors and entrepreneurs and thereby maximise the agent bank's profitability and sustainability in the market. Transferring credit risk to non-bank parties enables a more stable financial sector than transferring credit risk within banking sector (Wagner and Marsh, 2006). When the investor loan funding is allocated to entrepreneur the agent bank (AIRCAB) does not hold the disbursed fund as an asset on balance sheet and ceases to pay deposit interest on the disbursed amount.

The AIRCABS model is depicted by figure 1 below.

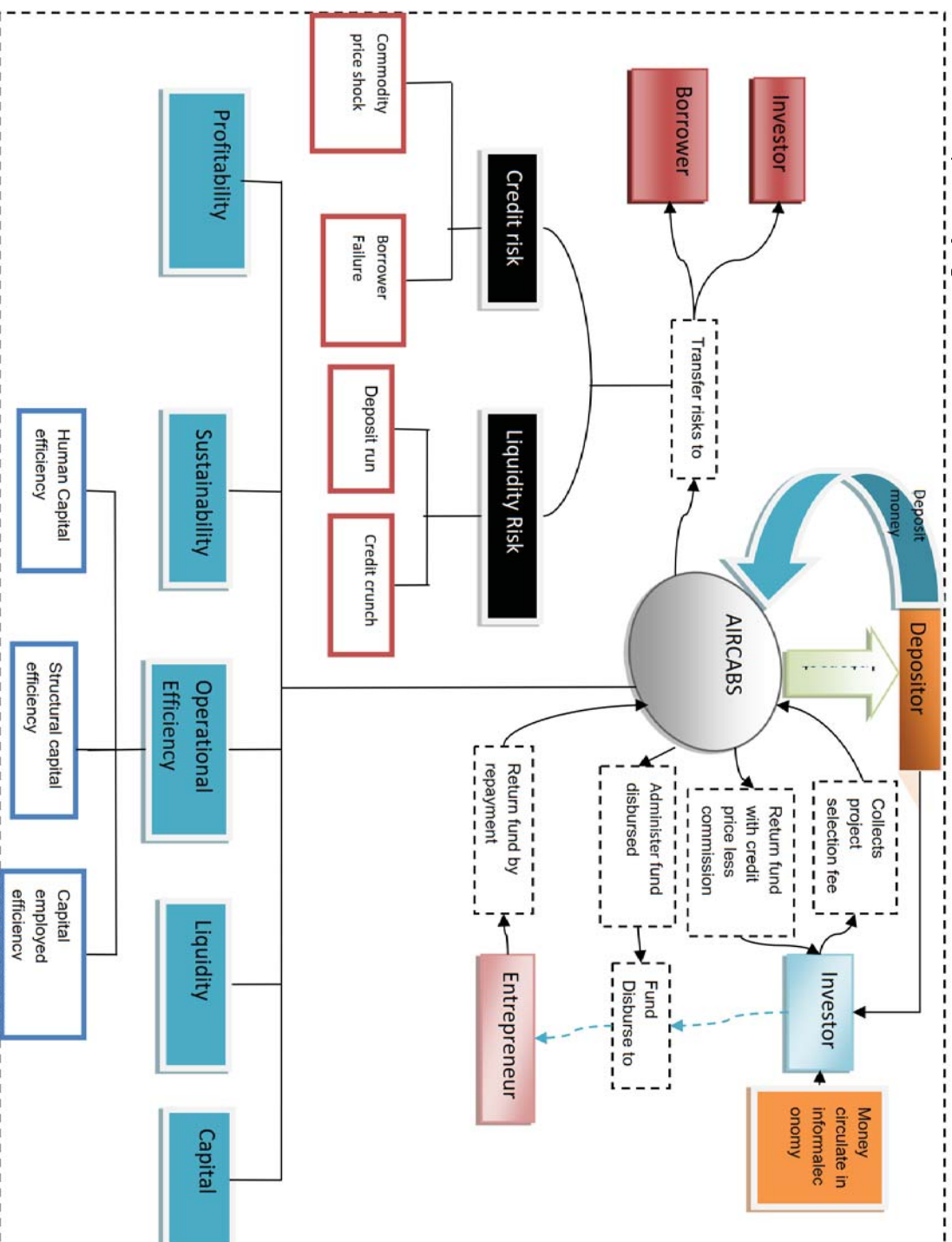


Figure. 1: AIRCABS Model
Source: Author

An AIRCABS maximises profitability, sustainability, operational efficiency, liquidity and capital by transferring credit risk and liquidity crunch to investors and entrepreneurs. Other factors were kept constant for this research study, and credit risk considered emanating from commodity price shock and borrower failure, whereas, liquidity crunch emanates from deposit run and credit crunch. An interest rate commission agent banking system needs to be more efficient in technology, human capital, finance, and applying adequate technology and human capital helps to avoid exposure to operational risk.

The AIRCABS model depicted in Figure 1 detailed how an agent bank processes investors loan funding and administers the loan after disbursement to generate non-interest income by collecting project selection fee and interest commission from investor's credit price as a return for loan administration and collection of disbursed fund on behalf of investors.

The method of data collection and analysis in developing the research methodology in general is detailed in the following section.

2. MATERIAL AND METHODS

The research study follows positivist data collection methods which help to test the hypotheses based on a primary and secondary data. For this research study nominal scales are used to measure categorical data, and ratio scales are employed. To measure categorical survey questionnaires binary scales are used. Ordinal data are measured using a five point Likert scales ranging from strongly agree to strongly disagree.

Primary data collected using self-administered survey questionnaires that were given to seventeen enumerators as contact persons of their own bank. The population was 1000 and the sample size was 300, which is proportionately surveyed according to the size of the banks' branches in Addis Ababa using stratified sampling method. The bank whose branch and capital market share is the biggest took a highest proportionate survey, whereas, the bank whose branch and capital market share is smallest took smallest proportionate survey. The increment of the number of employees indicates growth of loan disbursement and capital of the bank (Bernanke & Lown, 1991). This implies that the bigger the size of the bank the better the quality of data collected.

Secondary data from audited financial statements and their web site were considered for the covering period from 1 July 2006 to 30 June 2016. However all banks do not produce their audited financial statement at the same point in the accounting period and the aggregated financial statements of all banks that are reported to national bank of Ethiopia were considered for secondary data.

Hair, Anderson, Tatham and Black (1998) defined the minimum required observation to independent variables in multiple regression research as 5%, otherwise the sample size that does not meet the minimum requirement can lead to inadequate result. However, the ratio of observations to independent variables of the research study was 60 observations per variable, which is sufficient to have adequate results.

2.1 Measurement instruments

The survey questionnaires constructed to measure research variables were developed from literature. The survey instruments consisted of dichotomous and multipoint questions to which the respondent assigns value based on the underlying anchors on the scale and these were later summed to arrive at the total score. Ordinal data variables such as credit risk, liquidity crunch, an interest rate commission agent banking system employed Likert's summative scaling methods. Dichotomous data questionnaires for variables such as investor loan funding, stable deposit and discrete market deposit interest rate employed Guttman's cumulative scaling method.

To increase the reliability of variables derived from the summative or cumulative scale Chronbach's Alpha was used to determine the internal consistency or average correlation of items in survey instrument. The Alpha coefficient that range in value from 0 to 1 was applied to describe the reliability of factors extracted

from dichotomous or Likert scales. As a rule of thumb, Cronbach's Alpha greater than or equal to 70% is acceptable for the degree to which the measurement instrument succeeds in describing research interest (Chronbach, 1951).

Research variables used in the survey instrument were measured by Likert and binary scale questions. Because there is no revalidated measure that can measure instruments constructed in this research study, a new instrument was designed to measure the constructs.

2.1.1 Measurement instruments used to collect primary databysurvey questionnaires

I. Indicators of credit risk and liquidity crunch measures

- 1) Decrement of bank loan growth and capital is sign of liquidity crunch
- 2) Bank lending practices that make borrower more vulnerable to abusive practice enhances liquidity crunch.
- 3) Banks involved in high level of interest income are exposed to liquidity crunch
- 4) Misjudgement of bank strategy increases the bank liquidity risk.
- 5) Bank failures come from deposit run.
- 6) A high illiquid asset that is unaccepted for common valuation in market is the source liquidity risk
- 7) Instability of depositors leads the bank to liquidity risk
- 8) Diversifying loans funded by the bank out of intended purpose leads the borrower to default
- 9) Funding loan by bank to entrepreneur as own asset increases the bank's credit risk
- 10) Credit operation weakness of the borrower leads the borrower to default
- 11) A loan sanctioned by corruption leads the borrower to default
- 12) Lack of good credit assessment and follow-up by bank leads to an increase in nonperforming assets
- 13) Borrowers default due to a lack of management support from the lending institution
- 14) Buying and selling of money expose the bank to credit risk
- 15) Decline in price for commodity of exporters, who used bank loan facility, can result in higher nonperforming loans (NPLs)
- 16) As capital adequacy increases credit risk of the bank decreases

II. Indicatorsof Investor Loan funding measures

- 1). Investor Loan funding increases the agent bank's profitability
- 2). Investors' loan funding enhances the bank liquidity and efficiency
- 3). investor loan funding can enhance the bank's loan administrative efficiency and capacity
- 4). Funding loan by investors to entrepreneurs through an interest rate commission agent bank eliminates bank exposure to credit risk and liquidity crunch
- 5). As the supply of loan funding by investor to entrepreneur's increases through an interest rate commission agent bank investment in a country, it enhances and thereby increases the country's GDP
- 6). Benefiting credit price to investor loan funding enhances the agent bank interest rate commission

III Indicators of discrete market deposit interest incentive measures

- 1). The increase of deposit interest rate increases the demand of depositor.
- 2). Applying a discrete market interest rate incentive for those deposit's volume increases the demand of the depositor to keep their deposit stable increases
- 3). Applying various level deposit interest rate incentives for depositors enables the bank to obtain more stable deposits
- 4). Encouraging depositors to shift their partial or full deposit to investment to get credit price enables the bank to have more stable deposits
- 5). Allowing depositor to participate in investment by paying proportionate credit price for their partial or full fund enables the bank to havemore stable funds.
- 6). Interest incentive on deposit in terms of incentive in kind enables the bank to hold more clientele.

IV. Indicators of an interest rate commission agent banking system (AIRCABS) measures

- 1). The bank's buying and selling of funds deprive the depositors from obtaining a credit price

- 2). As deposit and credit interest rate approach equilibrium point the bank will work as an interest rate commission agent for investor loan funding to entrepreneurs to enhance its sustainability in the market
- 3). providing alternative investment opportunity to fund provider by AIRCABS enhances stable fund in the bank.
- 4). Providing high deposit interest rate and credit price by AIRCABS enables the bank to attract funds from the unbanked and banked society
- 5). Administering investor loan funding through AIRCABS eradicates liquidity crunch
- 6). Bank can transfer credit risk using AIRCABS to the entrepreneur and investor to increase its profitability and sustainability
- 7). AIRCABS enables the fund owner to search potential borrowers with or without collateral in the market to provide a credit facility using the bank as agent
- 8). The right of the investor and depositors to get their fund return will be safeguarded by the bank using AIRCABS
- 9). Under AIRCABS the bank's profit will be maximized without financial expense

2.1.2 Measures of continuous data type instruments applied in the models

I. Measures of Liquidity crunch ratio

This can be expressed in terms of liquidity risk and credit crunch. Liquidity risk arises from deposit withdrawal by customers, which causes the bank to run short of funds and force bank to liquidate illiquid assets. The bank liquidity exposure to risk can be measured using stock approach which employs ratios. Different authors use different ratios to measure liquidity risk exposure of a bank, but the fact remains that unsatisfactory ratio results may not indicate insolvency. Rather, it indicates the risk to increase the bank's awareness thereof. The main purpose of using stock approach is that it measures the bank's liquidity position at par, disregarding the size and standard level of the bank.

Zehri, Abdelbaki and Bouabdellah (2012) use liquidity shock measure as percentage of cash to total assets to show that the stability of Islamic banks was better than that of conventional banks during the crisis of 2007-8. Kumbirai and Webb(2010) use the liquidity shock of sudden deposit withdrawal as percentage of liquid assets to total deposit and short term borrowing funds.

However, the research study considered liquidity shock as bank run that erodes the deposit level at the bank and at this point an increase in customer deposit as against total customer deposit has a positive percentage, but a decrease has a negative percentage. Therefore, depletion of customer deposit can be a decline in percentage of the total deposit. This can be expressed as a shift of demand to deposit curve to the left. Therefore, bank run can be measured as a percentage change in deposit level to total deposit, which can be expressed as

$$\text{Deposit run in \%} = \frac{(D_{\text{Current}} - D_{\text{Last}})}{D_{\text{Total}}} \times 100 = \frac{\Delta D}{D_{\text{Total}}} \times 100$$

On the other hand, the other source of liquidity crunch is defined by Bernanke and Lown(1991) as a significant leftward shift in the supply curve for bank loans, holding constant both the safe real interest rate and the quality of potential borrowers. An interest rate commission agent banking system administers investors' loan funded to entrepreneurs without keeping the disbursed funds on bank balance sheet. However, a bank can use an interest rate commission agent banking system in a separate unit of the organisation along with the conventional banking system. In this case, new credit extension of banks in a country can be measured as percentage of change in loan extended to total loan.

$$\text{Credit Crunch in \%} = \left(\frac{L_{\text{Current}} - L_{\text{last}}}{L_{\text{Last}}} \right) \times 100 = \frac{\Delta L}{L_{\text{Total}}} \times 100$$

The same credit crunch measure is used by Bernanke and Lown (1991) to identify the decrement of gross loan either due to a reason inherent to the bank or liquidity crisis. As the level of loan advance decreases, investment and production weaken and, as a result, the liquidity crisis worsens. A financial crisis that arises from liquidity crisis can have a negative impact on the real economy of the country (Brunnermeier, 2009). However, an interest rate commission agent bank transfers risk to investors and entrepreneurs avoiding affects of financial crises that affect other banks.

The following is a summary of liquidity crunch variables used in this research study:

- 1) Deposit run-This ratio measure the effect of deposit run on banks as a percentage of change in deposit to total deposit. As the percentage of change in deposit declines, there is a run on banks by depositors. As deposit withdrawal increases, the bank's illiquid assets that cannot be converted into cash increases.
- 2) Credit crunch-This ratio measures the decrease in supply of loans at macro- level as a percentage of decrease of loans and advances to total outstanding loans. The decline in loans and advances indicates the existence of liquidity crunch.
- 3) Liquidity risk exposure-This ratio measures the liquidity risk of the bank as percentage of liquid assets to total of customer deposits and short term borrowing of the bank. As the ratio decreases, the bank becomes more exposed to liquidity risk.

II. Measures of credit risk Ratio

Accounting measure of credit risk variables captured the bank's nonperforming asset to total loan portfolio. The major factor that could affect banks' credit extension is the risk associated with borrower failure. Credit risk arises from the borrower's non-payment of the loan and has a current and prospective impact on the bank's earnings and capital. Once the loan has been overdue for more than ninety days the total amount is considered as non-performing asset even if the debtor pays continuously after not paying three payments. Non-performing asset ratio does not specifically measure how much the borrower lags repayments due to new loan disbursement but measuring at par enables us to understand. In identifying the factor affecting the bank credit Rabab'ah (2015) used the non-performing ratio measure as percentage of non-performing asset to total loan portfolio.

In identifying the impact of credit risk on bank performance Kolapo, Ayeni and Oke (2012) employed a ratio of loan loss provision to total loan to measure credit risk.

Commodity price shock can cause accelerated failure of bank borrowers businesses, which in turn leadsto them defaulting on loans. The commodity price shock measured as percentage change in price for shock (Arezki and Bruckner, 2010; Bruckner and Ciccone, 2010).

Increases in commodity prices indicate that commodity-exporting countries focus more on exportable items. Because of this, exporters who used bank loan are able to pay within agreed loan period, whereas, decline in commodity price makes exporters fail to repay bank loans. Negative commodity price shock can result in increasing bank nonperforming asset, bank costs and systematic banking crisis.

The following is a summary of credit risk variables employed in data collection for this research study:

- 1) Non-performing asset ratio (NPLS) - This ratio measures the level of non-performing asset to total loan portfolio. As the level of NPLs ratio increase beyond 5% of the total loan portfolio, which is the case in Ethiopian, the bank becomes more exposed to credit risk.
- 2) Credit Risk- This is a measure of loan loss provision to total loan. As the ratio increases, the bank is exposed to credit risk.

- 3) Commodity price shock ratio $\left(\frac{\Delta p}{p_0}\right)$ - This is a measure of change on the current price as a percentage of the last price. As the ratio decreases, the bank is more exposed to credit risk.

III. Measures of Investor loan funding Ratio

The source of investor loan funding can be deposits at bank in name of the investor or informal economy. In order to be supplied with a loan, an individual must have a constant source of income and progressive saving at the bank as a credible source of money. Per capita, it brings about higher savings and investments and thereby leads to the country's economic development. The financial sector development

is measured in terms of financial deepening, which has positive relationship with total domestic savings. Anthony (2012) used financial deepening as a measure of broad money (M2) to GDP ratio and per capita income as a measure of GNI per capita. To identify macroeconomic factors that affect the bank performance, Bashir (2003) employed GDP per capita and found a positive relationship with bank performance. On the other hand, Adu, Marbuah and Mensah (2013) indicated that the total private sector credit to GDP ratio has a positive effect on sustainability of financial development. Because the increase of investor loan funding enhances the agent bank profitability, the percentage of total gross private domestic investment to total domestic saving is considered by this research study as measure of investor loan funding.

The following is a summary of investor loan funding variables employed in data collection of this research study:

- 1) Financial deepening- This measures by the broad money (M2) ratio to GDP. It indicates the increased provision of financial service as a result of more liquid money available in the economy. The ratio indicates that the development of financial service is the result of the bank's sustainability and profitability in the market. A lower ratio indicates that the banking system has access to less funds and that the cost of funding is high, which causes lower bank profitability and sustainability in the market. The increment of the ratio indicates an increase in liquidity and thereby enhances banks' profitability and sustainability.
- 2) Per capita ratio- This is measured by Gross national income (GNI) per capita. The growth of the ratio indicates growth in saving and investment which in turn leads to growth in capital formation and re-investment. Per capita measure the income of each person in a country when resource is divided by total population. As income of the population increases the capacity of the society to invest its cash using an agent bank increases.
- 3) Total domestic saving ratio- This measures total domestic saving to GDP. This implies that it is a measure of excess of gross domestic saving over consumption by government and the private sector. As the ratio increases, it indicates that the country's capacity in domestic investment is higher and thereby the bank's profitability and sustainability in a market is also higher.
- 4) Gross private domestic investment to total bank deposit ratio- This measures total gross domestic investment in domestic production using private business capital to total domestic saving raised by the bank. The investment can use investor loan funding through AIRCABS. As the ratio increases, private investment increases and AIRCABS profitability increases.
- 5) Management efficiency ratio- This measures total non-interest income (i.e. interest income on loan charges and fee income) to the total asset less net loan advanced. Since AIRCABS does not hold disbursed loans as an asset, the demand by investors' increases and bank income from commission and fees also increases as interest rate increases. As the ratio increases the management efficiency to produce non-interest income employing its asset increases.

IV. Measures of discrete market deposit interest incentive ratio

In the traditional banking system, the increment of deposit follows the deposit interest rate attractiveness of a bank. As interest on deposit increases the demand of depositors to deposit their money at bank also increases. Therefore, applying deposit interest incentives for deposit mobilization enhances stable deposit at bank. An interest rate commission agent banking system can also mobilise deposit like a conventional bank to use the fund for investment. However, an AIRCBS can move to agent position if depositors wish to lend its fund to entrepreneurs through an AIRCABS to obtain the credit price. In this regard, an AIRCABS mobilise stable deposit by opening an alternative investment outlet for depositors. Mashamba, Magweva and Gmbo (2014) used net interest rate margin and average deposit rate as measure of deposit mobilisation. As deposit interest rate is the basic driver of deposit mobilisation at bank, the volatility of the rate in the market affects stable deposit mobilisation at bank. Applying deposit interest incentive per the incremental deposit volume that would remain deposited for some specified or

unspecified period enable banks to continuously mobilise stable deposit. The deposit incentive rate can be determined by the capacity of the bank to pay the deposit interest incentive. Therefore, this can also measure the percentage of total interest expense to capital of the bank. As the rate increases, the bank mobilises deposit by paying deposit interest incentive within its payment capacity.

The following is a summary of discrete market interest incentive variables employed in data collection of this research study:

- 1) Deposit rate –This ratio measures commercial bank average deposit interest rate. As the deposit rate increases, the bank deposit mobilisation increases.
- 2) Special deposit ratio-This ratio measures money deposited at bank for a specific purpose for the customer benefit that will not be withdrawn at any time by customer as ratio of total deposit. As the ratio increases, the bank's stable deposit increases.
- 3) Deposit interest incentive rate - This measures the change in growth of deposit interest rate as percentage of total deposit interest rate. The ratio measures how much incentive interest rate raised the level of deposit. An increase of the ratio indicates the growth in stable deposits at bank.
- 4) Efficiency of deposit utilisation ratio - This measures total interest expense as percentage of total loan interest. Interest expense directly related to availability of sufficient liquidity and the increase of loan cost implies the bank limitation to access fund in a market. The ratio is developed to indicate revenue generated by deposit in loan advances. As the ratio increases, the bank stable deposits increase.
- 5) Deposit interest incentive payment capacity ratio-The ratio measures deposit interest expense as percentage of total capital.

V. Measure of AICABS ratio

On the other hand, an interest rate commission agent banking system is a system to be adopted by the bank to be an agent for investor loan funding to entrepreneurs by facilitating fund seller-buyer agreement and administering the loan after disbursement by collecting credit price commission income and project selection fee from investors. As the agent bank administers the investor loan fund after disbursement and benefits investors credit price in terms of deposit interest rate, the agent bank does not hold disbursed loan as an asset on its balance sheet. The measuring variable of an interest rate commission agent banking system are non-interest income growth, Bank efficiency, Return on asset (ROA), Return on equity (ROE) and asset liquidity ratio.

The following is a summary of an interest rate commission agent banking system variables employed in data collection of this research study:

- 1) Non-interest income growth rate (NIGR) – This ratio measures the growth of non-interest income to total income. Non-interest incomes are fee, charge and interest rate commission income collected to administer investor loan funding to entrepreneur.
- 2) Bank's Efficiency ratio (BER) -The ratio measures total interest rate commission, fee, and charge incomes as percentage of non-interest expense. The ratio measures efficiency of the agent bank capacity to produce non-interest income using its human capital, administrative, technology and structural capital employed.
- 3) Return on asset (ROA) - This ratio measures the gross in profit excluding financial expense before interest and tax as percentage of total asset. The ratio implies how much managed asset is utilized to produce reasonable profit. As the ratio increases the efficiency management in utilizing financial and real investment resource to produce profit increases (Hassan & Bashir, 2003).
- 4) Return on equity (ROE) -The ratio measures net income excluding interest expense as percentage of equity of the bank. The ratio indicates how efficiently the bank management is using its shareholder funds.
- 5) Capital adequacy (CA) –This ratio measures the bank's capital as percentage of administrative expense. Since AICABS transfers credit risk to investors and entrepreneurs, increasing in capital adequacy indicates that bank enhances its stability, efficiency and profitability.

2.2 Method of Analysis

To investigate the bi-directional inter-relationship, as stated in section 1.2, between an interest rate commission agent banking system, and credit risk and liquidity crunch canonical correlation analysis is used in the first hypothesis. In the second and third hypotheses to predict and explain the relationship between the nominal dependent variable and independent variables multiple logistic regression is used.

2.2.1 Canonical Correlation Analysis

Canonical correlation is a multivariate technique that helps to identify the nature, magnitude and relationships within a set of dependent/independent variables and across two sets of independent and dependent variables. The dependent variable for the research under study is AIRCABS and the independent variables are credit risk and liquidity crunch. Since the observation per independent variable is 60 according to the guideline, the sample size is sufficient for canonical correlation and Type II error will not be a problem when the null hypothesis do not reject when it is false (Henry, 1990; Harrell, 2001). The independent and dependent variables in canonical correlation analysis are detailed Tabl.

Table 1. Dependent and independent variables used in canonical correlation analysis

| Independent Variables | Indicators | Measurement level | Variable nature in bi-directional correlation |
|---------------------------|---------------------------------------|-------------------|-----------------------------------------------|
| Liquidity Crunch | Deposit Run($\Delta D/TD$) | Continuous (Time) | Independent /dependent Variable |
| | Credit Crunch($\Delta L/TL$) | Continuous (Time) | Independent /dependent Variable |
| | Liquidity Risk (LA/TDB) | Continuous (Time) | Independent /dependent Variable |
| Credit risk | Non-performing asset ratio(TNPLs/TL) | Continuous (Time) | Independent /dependent Variable |
| | Credit risk(LLp/TL) | Continuous (Time) | Independent /dependent Variable |
| | Commodity shock($\Delta P/P$) price | Continuous (Time) | Independent /dependent Variable |
| Dependent Variable | | | |
| AIRCABS | Non-interest income growth rate(NIN) | Continuous (Time) | Independent /dependent Variable |
| | Bank's Efficiency ratio(BER) | Continuous (Time) | Independent /dependent Variable |
| | Return on asset (ROA) | Continuous (Time) | Independent /dependent Variable |
| | Return on equity (ROE) | Continuous (Time) | Independent /dependent Variable |
| | Capital adequacy ratio(CA) | Continuous (Time) | Independent /dependent Variable |

Source: Author

The variables' indicators in figure 2 are canonical variable of AIRCABS, credit risk and liquidity crunch, the interrelationship of which can be canonical correlation. The relationship between independent and dependent variable indicators employed in canonical correlation is depicted in figure 2.

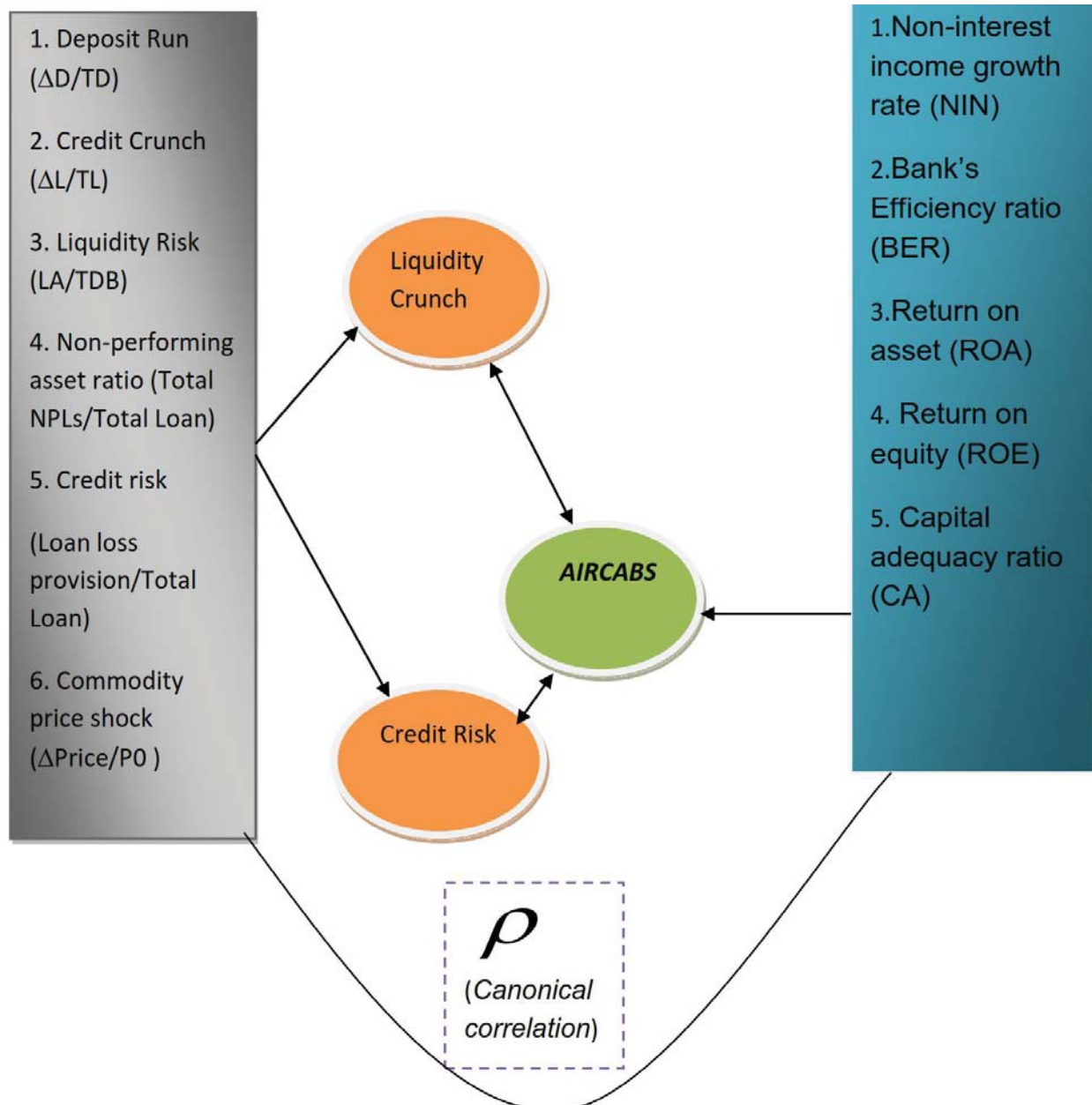


Figure 2: Canonical correlation between canonical variants of AIRCABS, and credit risk and liquidity crunch

Source: Author

Since canonical correlation reveals the strength of two sets of independent and dependent variables, analysing the impact of credit risk and liquidity crunch on AIRCABS using canonical correlation will show the basic relationship. Canonical correlation analysis solutions are sensitive to changes of variables such that the change of variables in one variant can be noticed when changing the composition of other canonical variates. Suppose the credit risk and liquidity crunch components are represented by (x) and the AIRCABS components are represented by (y), as independent and dependent variables respectively. Since each credit risk and liquidity crunch, and AIRCABS component variables vary across and within the group, the equation of canonical correlation has been calculated as:

Credit risk and liquidity crunch(x) = AIRCABS(y) which can be expresses by

$$U = A_t (\text{credit risk and Liquidity crunch})$$

$$W = B_t \text{AIRCABS}$$

where A_t , and B_t are cannonical weights

The correlations between the linear combinations are termed canonical correlations. In the maximisation process, there are \mathbf{pX} and \mathbf{qY} pairs of variables respectively, such that $p \leq q$ for which maximum \mathbf{p} canonical correlations are generated. Consider for \mathbf{p} vectors of \mathbf{U} and \mathbf{W} variates are sampled such that, S_{xx} and S_{yy} are within-set variance-covariance matrices and S_{xy} is covariance matrix for the vector \mathbf{X} and \mathbf{Y} .

The linear combination of credit risk and liquidity crunch variables (\mathbf{U}) with a group of set AIRCABS (\mathbf{w}) by using each set of variables can construct credit risk and liquidity crunch, and AIRCABS variants through the following equation

A) The linear combination of credit risk and liquidity crunch variables (\mathbf{U})EQ(2.1)

$$(\text{Credit risk and liquidity crunch})(u_1) = a_{11}(\Delta D / TD)_1 + a_{12}(\Delta L / TL)_2 + a_{13}(LA / TD)_3 + a_{14}(NPLs / TL) + a_{15}(LLP / TL)_5 + a_{16}(\Delta p / p)_6$$

$$(\text{Credit risk and liquidity crunch})(u_2) = a_{21}(\Delta D / TD)_1 + a_{22}(\Delta L / TL)_2 + a_{23}(LA / TD)_3 + a_{24}(NPLs / TL) + a_{25}(LLP / TL)_5 + a_{26}(\Delta p / p)_6$$

$$\vdots$$

$$(\text{Credit risk and liquidity crunch})(u_p) = a_{p1}(\Delta D / TD)_1 + a_{p2}(\Delta L / TL)_2 + a_{p3}(LA / TD)_3 + a_{p4}(NPLs / TL) + a_{p5}(LLP / TL)_5 + a_{p6}(\Delta p / p)_6$$

B) The linear combination of AIRCABS (\mathbf{W}).....EQ(2.2)

$$\text{AIRCABS}(W_1) = b_{11}(NIN)_1 + b_{12}(BER)_2 + b_{13}(ROA)_3 + b_{14}(ROE)_4 + b_{15}(CA)_5$$

$$\text{AIRCABS}(W_2) = b_{21}(NIN)_1 + b_{22}(BER)_2 + b_{23}(ROA)_3 + b_{24}(ROE)_4 + b_{25}(CA)_5$$

$$\vdots$$

$$\text{AIRCABS}(W_q) = b_{q1}(NIN)_1 + b_{q2}(BER)_2 + b_{q3}(ROA)_3 + b_{q4}(ROE)_4 + b_{q5}(CA)_5$$

Therefore, the i^{th} canonical variate credit risk and liquidity crunch with AIRCABS pair as (U_i, W_i) . These canonical variate pairs are simply the correlation between U_i and W_i which can be expressed by the following formula

For Canonical variate pairs between credit risk (U_i) and AIRCABS (W_i)

$$(\text{Canonical correlation})_i = \frac{\text{cov}(U_i, W_i)}{\sqrt{\text{Var}(U_i)\text{Var}(W_i)}} \dots\dots\dots \text{EQ (2.3)}$$

Let the random vector of credit risk and liquidity crunch and AIRCABS be (\mathbf{U} , \mathbf{W}) then the sample(\mathbf{S}) of random vector can be expressed as

$$S = ((U_1, W_1), (U_2, W_2), \dots, (U_n, W_n)) \text{ Where } S_u = (U_1, U_2, \dots, U_n) \text{ } S_w = (W_1, W_2, \dots, W_n)$$

From the equation, we need to find the coefficients of (a), (b)(in EQ (2.1), EQ (2.2)). Suppose we have **p observation (x)** for credit risk and liquidity crunch and **q observation (y)** for AIRCABS variants such that the vector variables S_{xx} and S_{yy} are within-set covariance matrices of **X** and **Y** respectively, and S_{xy} is between-sets covariance matrix. Considering the random variables **X** and **Y** with zero mean

$$\text{The covariance Matrix} = \begin{bmatrix} S_{xx} & S_{xy} \\ S_{yx} & S_{yy} \end{bmatrix} \dots\dots\dots \text{EQ (2.4)}$$

(Gray, 2011)

For which the canonical coefficient a_i and b_i measure the strength of the relationship between the two canonical variants of credit risk and liquidity crunch, and AIRCABS can be determined by solving the following equations

$$\begin{aligned} (S_{xy}S_{yy}^{-1}S_{xy} - \lambda_i S_{xx})a_i &= 0 \\ (S_{xy}S_{xx}^{-1}S_{xy} - \lambda_i S_{yy})b_i &= 0 \end{aligned} \dots\dots\dots \text{Eq (2.5)}$$

Where $i = 1, 2, 3, \dots, n$ and the lambda (λ_i) is the ordered Eigenvalues of the corresponding determinate equation. Therefore, we have correlations

$$\rho_1 \geq \rho_2 \geq \dots \geq \rho_p$$

With corresponding vectors $(a^1, b^1), (a^2, b^2) \dots, (a^p, b^p)$ by maximising the correlations

$$\begin{aligned} \rho_s &= \text{cor}((\text{credit risk and liquidity crunch})^s, (\text{AIRCABS})^s) \\ &= \max_{a^s, b^s} \text{Cor}((\text{credit risk and liquidity crunch})(a^s), (\text{AIRCABS})(b^s)) \end{aligned} \dots\dots\dots \text{EQ (2.6)}$$

Which subject to $\text{Var}((\text{credit risk and liquidity crunch})(a^s)) = \text{Var}(\text{AIRCABS}(b^s)) = 1$

Where $s = 1, 2, 3, 4, \dots, p$

(Gonzalez, D_ejean, Martin, and Baccini, 2008; Hotelling, 1936)

Therefore, we could look at how well the set of independent variables can predict the set of dependent variables. They reflect the proportion of variance in the canonical variate explained by the canonical correlation relating two sets of variables. There will be as many Eigen values as there are canonical correlations (roots). In this research study, the proportion of credit risk and liquidity crunch (X) and AIRCABS (Y) are the sum to unity to make S_{xx} and S_{yy} singular. The singularity condition can be calculated by eliminating one variable from each sets and the (p-1) and (q-1) variables will be paired.

According to Hair, Anderson, Tatham et al. (1998) when computing canonical relationship the correlation between two sets of variables is based on: Level of significance, Magnitude of canonical root and redundancy index. However, the research study interest is to show the null hypothesis true using three criteria to identify no relationship between pairs of variates in canonical correlation. Therefore, the research study considered the canonical correlation between credit risk and liquidity crunch on the one hand and AIRCABS on the other hand significant when it is greater than 5%, when the magnitude of variable loading is less than 30% and redundancy index is less than 10%.

Since the successive canonical roots are uncorrelated the redundancy of credit risk and liquidity crunch variable sets can be calculated by considering the AIRCABS set of variables and similarly AIRCABS set of variables can be calculated by considering the set of credit risk and liquidity crunch variables. To arrive at single redundancy index all redundancies across all root can be summed otherwise the first significant root can be considered as proposed by Stewart and Love (1968).

However, the redundancy of coefficient that explained less than 10% of the remaining variance after that explained by a certain number of functions, the effect size of other functions considered as a significant non-correlation (Sherry and Henson, 2005).

The three methods of determining the relative importance of the canonical function relationship are canonical weights, canonical loading and canonical cross loading.

Among all methods some authors considered canonical loading as alternate to cross-canonical loading to interpret the result (Thompson, 1991; Liu, Drane, Liu, Wu, 2009; and Hair et al., 1998). However, this research study considered both canonical loading and cross-loading to interpret the result. Rotation in canonical correlation loses the optimal interpretation of the analysis. However, canonical functions, canonical loadings, and standardized canonical coefficients are interpreted using Kaiser's (1974) normalized varimax rotation criterion.

In order to test level of significance of canonical correlation between independent and dependent variates, Wilks's lambda chi-square is applied. While testing the correlation to avoid type I error, the significance value to interpret the result is set at a 95% confidence interval level. To interpret the magnitude or practical significance of the results, the value of squared canonical correlation that have values: 1.96% for small, 13.04% for medium and 25.92% for large and partial correlation have values: 14%, 36% and 51% respectively (Cohen, 1992).

The data for canonical correlation are analyzed using SAS. The correlation between AIRCABS with credit risk and liquidity crunch showed the existence of the impact of credit risk and liquidity crunch on an interest rate commission agent banking system (AIRCABS). However, the non-correlation between AIRCABS on the one hand and credit risk and liquidity crunch on the other hand showed that credit risk and liquidity crunch have an insignificant impact on an interest rate commission agent banking system (AIRCABS). The null hypothesis is accepted and is the interest of this research study when the first set of variables is independent from the second set of variables, and the regression coefficient, except for the intercepts equal to zero.

2.2.2 Multiple logistic regressions Analysis

The problem of the research under study calls for analysis and prediction of a dichotomous outcome: whether an agent bank, in applying AIRCABS, is profitable and sustainable in the market as a function of investor loan funding and whether a bank mobilises stable deposit as a function of discrete market deposit interest incentive.

To test and describe the relationship between the categorical outcome variable and one or more categorical or continuous predictor variables a multiple logistic regression statistical tools was employed. Logistic regression was developed in handling dichotomous outcomes as an advanced technique of ordinary least squares. Although both logistic regression and ordinary least square were used to test the relationship with a binary criterion, logistic regression is superior to ordinary least square (Pohlman&Leitner, 2003). Tabachnick and Fidell (2014) and Bayaga (2010) concur that multinomial logistic regression is considered an attractive tool for analysing because of the following facts

- a. It does not assume:
 - I. Normality and equal variance matrices across the groups,
 - II. Linear relationship between dependent and independent variables
 - III. Homoscedasticity, the variance around the regression line, is the same for all values of the predictor variable.
- b) It assumes independence among dependent variable choices. The choice or membership of one category is not related to the choice or membership of another category (i.e., the dependent variable).
- c) It allows the probability of occurrence of dependent variable given the value of independent variables
- d) It assumes non-perfect separation by predictors to not estimate unrealistic coefficients and to keep a non-exaggerated effect size.

The dependent and independent variables used in multiple logistic regression are detailed in Table 2.

Table 2. Dependent and Independent variables used in multiple logistic regression

| Independent Variables | Indicators | Measurement level | Variable nature |
|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------|
| | Relationship between Investor loan funding and profitability and sustainability | | |
| Growth in profitability and sustainability(GPS) | Return on capital (ROC) $r = \frac{ROC_i - ROC_{i-1}}{ROC_{i-1}}$ for $i=1,2,3,...,N$ | $r > 0 \rightarrow \text{GPS}$ $r < 0 \rightarrow \text{No GPS}$ | Dependent/categorical |
| Investor loan funding(ILF) | Loan to deposit (TL/TD) $ILF = \frac{TL}{TD}$ | $ILF \geq 1 \rightarrow \text{ILF}$ $ILF < 1 \rightarrow \text{No ILF}$ | Independent Variable/categorical |
| | Financial Deepening(M2/GDP) | Continuous (Time) | Independent /control variable |
| | Per capita ratio(GNI/POpn), | Continuous (Time) | Independent /control variable |
| | Total domestic saving ratio(TS/GDP) | Continuous (Time) | Independent /control variable |
| | Gross private domestic investment to total bank deposit ratio(GPDI/TBD) | Continuous (Time) | Independent / control variable |
| | Management efficiency ratio (NNI/NA). | Continuous (Time) | Independent Variable |
| | The relationship between interest incentive and stable deposit | | |
| Stable Deposit(SD) | Core deposit to total deposit(CD/TD) $cdr = \frac{CD_i - CD_{i-1}}{TD_{i-1}}$ | $cdr > 0 \rightarrow \text{SD}$ $cdr < 0 \rightarrow \text{No SD}$ | Dependent/Categorical |
| Discrete market interest incentive (DMDI) | Net interest rate to normal (NIR/N) $dmdi = \frac{\max(i)_m - \text{normal}(i)_m}{\text{normal}(i)_{m-1}}$ $i=\text{interest rate } m=1,2,3,...,m$ | $NR > 0 \rightarrow \text{dmdi}$ $NR < 0 \rightarrow \text{No dmdi}$ | Independent /categorical Variable |
| | Average Deposit rate (AVDR) | Continuous (Time) | Independent |
| | Special deposit rate(SPDR) | Continuous (Time) | Independent Variable |
| | deposit interest incentive(DIIR) | Continuous (Time) | Independent Variable |
| | Efficiency of deposit utilization ratio(EDUR) | Continuous (Time) | Independent Variable |
| | deposit interest incentive payment capacity (DIPC) | Continuous (Time) | Independent Variable |

Source: Author

Variables to predict the impact of investor loan funding on the bank's profitability and sustainability, such that investor loan funding, and profitability and sustainability of AIRCABS in a market, are categorical

variables for which data entered into analysis as dummy coding 1 for existence of investor loan funding, profitability and sustainability; and 0 for nonexistence of investor loan funding, profitability and sustainability. Similarly, variables to investigate the impact of discrete market deposit interest incentive on the bank's stable deposit mobilisation, such that discrete market deposit interest incentive and stable deposit, are categorical variables for which the data entered into analysis as dummy coding 1 for existence of discrete market deposit interest incentive, stable deposit; and 0 for nonexistence of discrete market deposit interest incentive and stable deposit.

While using data in analysis, continuous value is applied for continuous predictors of dependent variables. Each of the categorical variables has a single dichotomous outcome with more than one independent variable. When the value of the predicted coefficient is equal to zero in the multiple logistic regression model, the hypothesis being tested is said to be null hypothesis, which implies that there is no relationship between the predicted independent variable and the value of outcome dependent variable. The multiple logistic regression equation in null hypothesis did not predict independent variable closer to the mean of dependent variables. However, significance of the hypothesis implies that at least one of the coefficients values of the predictors is greater than zero and closer to the mean of the dependent variable. The variable's relationship in the hypothesis is depicted in Figure 3.

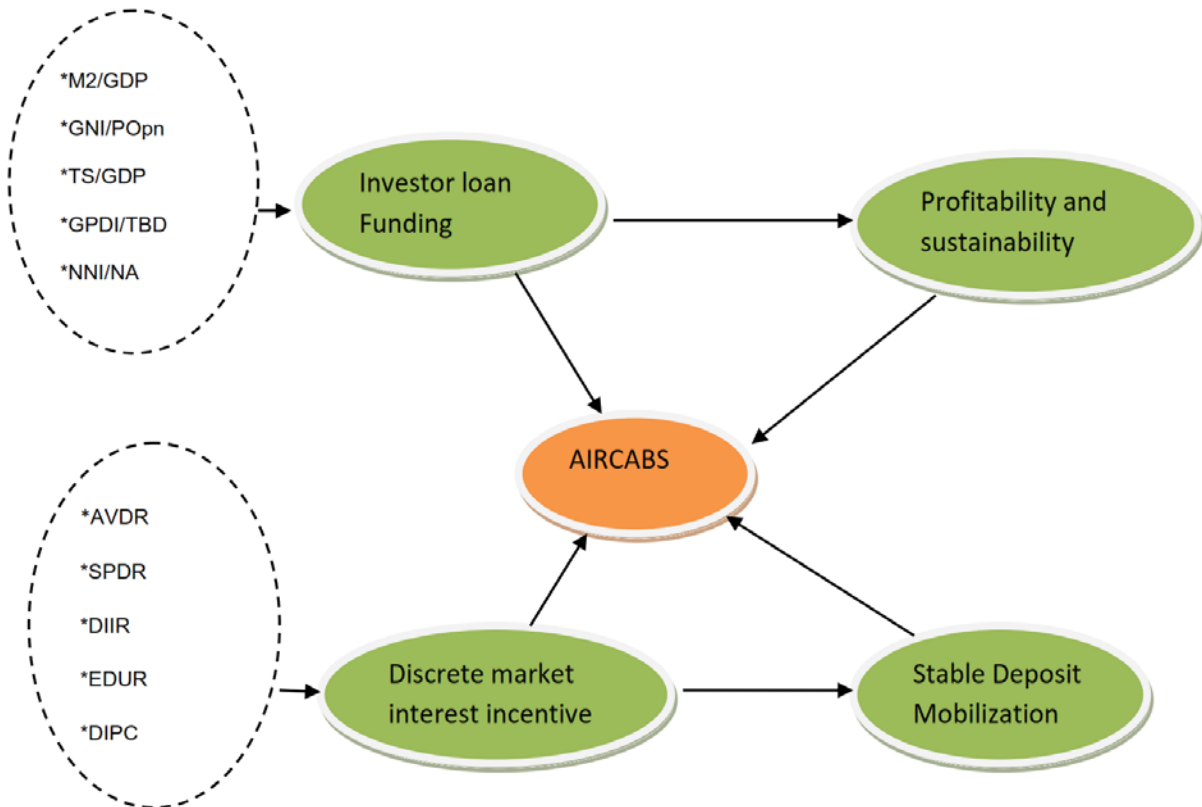


Figure 3: Hypotheses (H1 and H2) variables relationship

To identify which of the independent variables' indicators were predictors of dependent variable, profitability and sustainability of the bank in the market, in the first research hypothesis is depicted by the following multiple logistic regression equation

$$\text{Log} \left[\frac{GPS(p=1)}{1 - GPS(p=1)} \right] = a + b_1(ILF) + b_2(M2 / GDP) + b_3(GNI/Popn) + b_4(TS/GDP) + \dots \text{EQ (2.7)}$$

$$b_5(GPDI / TBD) + b_6(NNI / NA)$$

Similarly, which of independent variables were the best predictors of dependent variable, stable deposit mobilisation, in the second research hypothesis depicted by the following multiple logistic regression equation

$$\text{Log} \left[\frac{SD(p=1)}{1-SD(p=1)} \right] = a + b_1(DMDI) + b_2(AVDR) + b_3(SPDR) + b_4(DIIR) + \dots \text{EQ (2.8)}$$

$$b_5(EDUR) + b_6(DIPC)$$

Where:

a is the y(GPSor SD) intercept and b is the slop parameter which lay between interval (0,1)

Goodness-of-fit of multiple logistic regressions: To assess the fit of the model against data collected to test the hypotheses, four inferential tests, such as Brown chi-square, the Pearson chi-square, the deviance-based, and the Hosmer-Lemeshow (H-L) tests were conducted and a descriptive measures were adopted (Brown,1982; Prentice,1976;Hosmer&Lemeshow,2005).

3. SUMMARY

The paper presents a stepwise description, explanation and prediction of dependent and independent variables in research methodology to discover the effect of credit and liquidity crunches on an interest rate commission agent banking system in administrating investors' loan funding to entrepreneurs, to discover the effect of investors' loan funding on an interest rate commission agent bank profitability and to discover the effect of discrete market deposit interest rate incentive on an interest rate commission agent bank's stable deposit mobilisation to finance entrepreneurs. The research under study follows positivist research approach to identify the cause and effect relationship between dependent and independent variables.

The empirical research is guided by the recent relevant theory of banking, existing and emerging literature on credit and liquidity crunch, the impact of interest rate on deposit and bank profit. Since the bank business model under this research study is new, no emerging literature existed.

Dependent variables with identical control variables are developed to test the robustness and comparability in findings. Primary data collected using cross sectional survey over 17 commercial banks in Addis Ababa, Ethiopia. The sample size is 300 of a target 1000 population. Secondary data are collected using target banks' financial statement and quarterly magazines of the national bank of Ethiopia published in between 1 July, 2006 up to 30 June, 2016. To estimate correlation of dependent and independent variables canonical correlation and multiple logistic regressions were employed. The survey questionnaires were analysed using Cronbach Alpha. The relationship between dependent and independent variables was analysed using SPSS (or SAS) statistical software.

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ANALYSIS OF PRICE BUBBLES IN REAL ESTATE

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[dx.doi.org/10.18374/IJBR-16-5.3](https://doi.org/10.18374/IJBR-16-5.3)

ABSTRACT

This paper deals with the topic of price bubbles in the Czech real estate market. The paper lists ways of identifying the bubbles in the real estate market via relative measures and econometric models. Econometric models are used to analyze particular factors that influence the development of apartment prices in the Czech Republic. Emphasis is placed on the influence of interest rates on asset prices, since low inflation and expansive monetary policy can create conditions for the formation of a price bubble.

Keywords: housing prices, asset bubbles, interest rate, low inflation, expansionary monetary policy, regression.

1. INTRODUCTION

An asset price bubble can be defined as an assymetrically created deviation between market price of an asset and its fundamental value, which can undergo a sudden and strong adjustment by the market. Stiglitz (1990) defines the price bubble as follows: "The basic intuition is straightforward: if the reason that the price is high today is only because investors believe that the selling price will be high tomorrow - when "fundamental" factors do not seem to justify such a price - then a bubble exists." According to behavioral finance the price of an asset is not composed solely of fundamental factors, but also of factors that are not incorporated in this element and are not directly measurable (e.g. psychological factors). Case and Shiller (2004) state that a price bubble in real estate market is driven by demand of buyers, who are willing to pay high prices for properties today, because they are expecting an unrealistically high evaluation of housing in the future. Ferguson (2013) explains price bubbles in his book by means of five phases, i.e phases of creation and development of a price bubble. The initial phase is characterized by change in economic conditions that create new and interesting opportunities for investment companies. In the second phase, in expectation of a profit increase, the investors are zealously buying, which in turn leads to a quick increase in the price of assets. In the next phase the first-time investors and speculators also enter the market – their main motivation is a vision of easily achievable capital profit. The growth in demand leads to the creation of a price bubble, since the generated market prices are not fundamentally justified. In the second to the last phase the fear from prices of financial instruments being too high, causes investors to start selling the assets. For the last phase, a disillusionment of the investors is characteristic with mass and often panic sale of assets, which leads to a sharp decline in prices and to a deflation of the price bubble.

This paper places attention on the interpretation of the relationship between monetary policy and asset prices according to Austrian School and representatives of traditional economics. The empirical part lists ways of identifying price bubbles in the real estate market via relative measures and econometric models. Econometric models are used to analyse particular factors that influence the development of apartment prices in the Czech Republic. Emphasis is placed on the influence of interest rates on asset prices, since low inflation and expansive monetary policy can create conditions for the formation of a price bubble

2. LITERATURE REVIEW

There is a great deal of literature regarding the relationship between monetary policy and asset prices. According to the traditional point of view, the increase of liquidity in economics via transmission mechanisms of monetary policy will lead to the growth in asset prices in a situation when the

central bank's operations have appropriate effects on market interest rates and lead subjects to preferring risky assets and assets which preserve the real value of money. Older Keynesian models such as Metzler, claim that the central bank's operations affect capital markets directly. Friedman and Schwartz (1963a) and later also Tobin (1969) and Brunner and Metzler (1981) explain that asset prices grow due to an operation carried out on the free market by the central bank. At first, these operations affect prices of state securities, followed by the prices of shares, real estate, other commodities (e.g. gold) and eventually the overall price level. This point of view considers asset prices as a possible indicator of future inflation.

The Austrian point of view that goes back to representatives such as Hayek, von Mises, Robbins, and others, assumes that a significant growth in asset prices, regardless of its fundamental basis, can lead to a bubble if a relaxed monetary policy allows the growth of bank loans. This view compares asset price growth to growth in the overall price level. Modern representatives of this school discussed the topic of a price bubble on asset market. Borio and Lowe (2002), Borio and White (2003) and another papers focus on the problem of financial imbalance. This is defined as a quick increase in the amount of loans, which is followed by quick growth of asset prices. Authors keep warning that accumulation of these imbalances can increase the risk of formation of a financial crisis, which leads to macroeconomic instability. Using the index of instability which consists of loan gap and output interval they identify a slump in asset prices that could lead to significant losses in real output. Borio (2013) in relation to that discusses the influence of real estate prices and loan expansion on financial cycles. If the peak of a financial cycle corresponds with the peak of an economic cycle, a decrease in real estate prices follows as well as a bank crisis that can even lead to a recession – similar to 2007. According to Borio and Lowe, low inflation can lead to financial instability regardless of the reason for asset prices growth. A low inflation creates optimistic macroeconomic environment that pushes real estate prices upwards. Low-inflation environment is also the topic of an article by Hotta and Jokipii (2012), where they point out that historically the asset prices growth came often about in periods of low inflation and low interest rates.

3. METHODOLOGY AND MODELING

In order to identify an asset price bubble on an example of the Czech economy, relative measures and structural models have been implemented.

Relative measures provide initial recognition of imbalanced price and identification of possible occurrence of a price bubble. Due to insufficiently long time periods and not accounting for fundamental factors, these measures can report inaccurate overestimation of assets in comparison to historical models. These relative measures include the real estate price to income ratio (price-to-income) and real estate price to rental costs ratio (price-to-rent).

Structural methods make use of econometric models to detect the asset price determinants using fundamental factors.

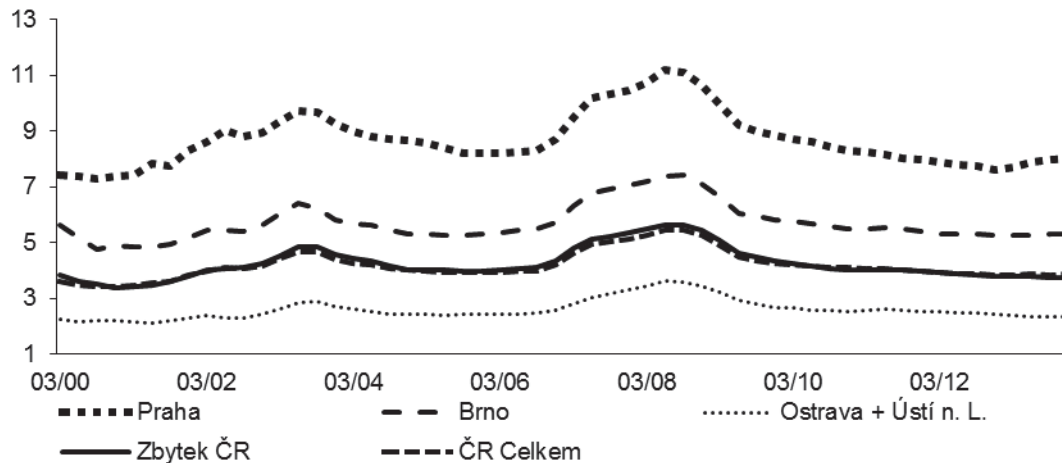
4. FINDINGS

Relative measures

The relative measure price-to-income (hereinafter P/I) predicts accessibility of real estate while taking into account income. A high value of this measure points towards difficulty with financing real estate, since its initial costs are relatively high in comparison to income. Development of the P/I measure is watched over by CNB, which publishes the results in its financial stability reports. P/I measure represents the ratio between price of an apartment of 68m² and the variable wage total of one year.

The development of the P/I measure is visualized on graph n. 1, where a real estate market bubble can be identified in years 2003 and 2008. The first bubble is related to the Czech Republic entering the European Union, and the second one is related to the world financial crisis. Currently, there are no evident price bubbles.

Graph n. 1: Development of price-to-income measure



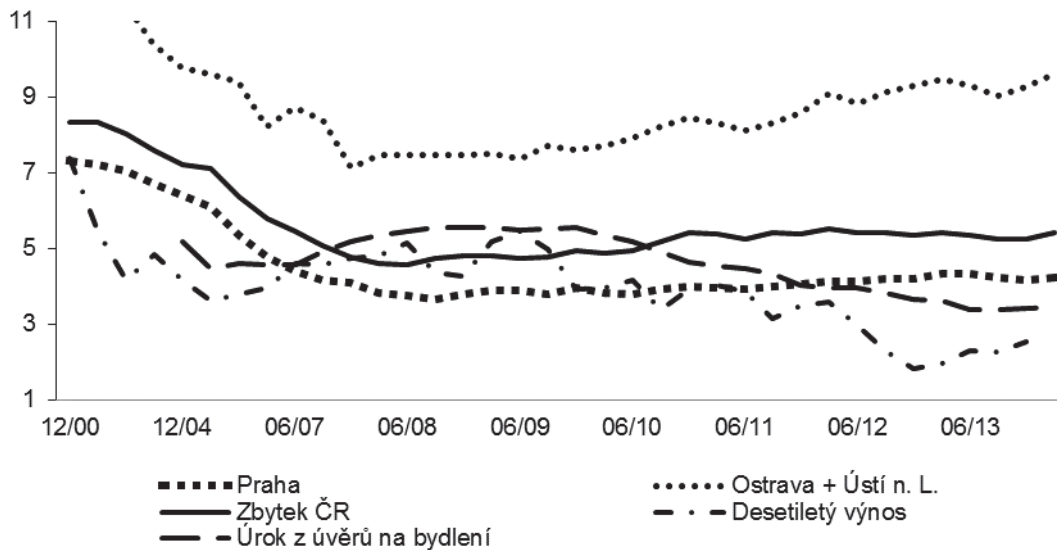
Source: CNB, ARAD – time period system

The graph also implies, that the value of the P/I measure is much higher for Prague than for other regions in Czech Republic. This fact can be explained for example by the unemployment rate, which is lower in Prague in comparison to other parts of Czech Republic. In regards to accessibility of housing, Prague seems to be the most problematic region, since an average household in Prague needs twice as much time to earn enough to afford their own housing in contrast to other regions.

The relative measure price-to-rent (hereinafter P/R) provides information about the development of the relation between the real estate price and the rental income. A high value of this measure points at overestimation of an asset, which originates in expectations of future income from the rent. High value of P/R also indicates unprofitability of owning housing in comparison to rental housing, which means that with increasing P/R, the interest in owning housing should decrease. One of the main flaws of this measure is that it neglects forgone opportunity costs, respectively, not allowing comparison of rental income and income from other investments.

This measure is monitored regularly by CNB as well as compared to yields of ten year state bonds and to tariffs of new housing loans in order to remove the above mentioned flaws.

Graph n. 2: Development of price-to-rent measure



Source: CNB, ARAD – time period system

From graph n. 2 we can infer that until year 2008, the value of the P/R measure decreases, while from year 2009 a slight increase of this measure in Prague and the rest of Czech Republic has been recorded. This growth is more significant in Ostrava and Usti nad Labem, which indicates that apartments in these regions are overestimated.

Based on statistics of the largest real estate portal in Czech Republic (sreality.cz), the quickest return on investment on a small apartment can be achieved in Ustecky region, where renting such an apartment will return the purchase price in just an average of 6 years. In Prague, the return on investment on a similar rental apartment can be expected in as long as 28 years on average. Prague is also characterized by the largest amount of available rental apartments and the highest rents of all the regions. In contrast, the north of Moravia is the cheapest when it comes to renting an apartment in all Czech Republic. The reason for this is a large decline in population caused by work opportunity motivated migration, since at the north of Moravia the unemployment rate reaches up to approximately 8%.

This graph also visualizes the development of interest rates on housing loans, which have kept decreasing since 2010. In regards to its low value, it seems that purchasing apartments is a relatively profitable investment. Another reason for this is that returns from alternative investments are at low rate. Analysis of the relation between interest rate and housing costs takes place further.

Structural methods

An analysis of fundamental factors that determine the development of real estate prices has been carried out for example by Case and Shiller (2003) and Vladimir Kluyev (2008). Authors divided the fundamental factors into supply factors and demand factors. Demand factors that influence the development of prices in the real estate market include development of wage, employment, interest rates and changes in the ways of financing a purchase of real estate. Other factors that can affect prices of real assets are transportation infrastructure, civil amenities, safety and demographic factors. The price of real estate is influenced mainly by cost factors (e.g. prices of land, building costs, tax rates, transaction costs) as well as barriers related to construction of new apartments (level of constructability, administrative difficulty when obtaining permissions).

The price bubble in the example of the Czech Republic has been analyzed by Cadil (2009), who followed a uniform development of real estate prices using the VAR model. Hlavacek and Komarek (2009) assessed the determining factors of real estate prices using econometric models and came to the conclusion that the prices of apartments are influenced by cost and demographic factors, unemployment rate and wage growth. Furthermore, they focused on determining a time period during which the real

estate prices were overestimated. They identified a price bubble in years 2002/03 and also in years 2007/08. The increase in prices in the recent time period is explained by fundamental factors and thus they rated the price bubble as insignificant. Nevertheless, in relation to the impacts of the financial crisis on the Czech economy, they did not rule out recurrent inflation of the bubble based on worsening of fundamental characteristics in a situation, where an absolute decline of real estate prices would not take place. The following empirical portion is dedicated to analyzing selected fundamental factors in relation to real estate prices using econometric models.

Analysis of relation between time periods

The regressive analysis of time periods is based on quarterly data from I/2002 to IV/ 2014 that were acquired from Czech national bank's public database ARAD. Since the time periods are quarterly, in order to clear the periods that exhibited seasonality, method X13ARIMA (US Census Bureau, 2014). Was used time periods cleared of seasonality are marked in the analysis as SA (seasonality adjusted).

Analyzing the long-term relationship among time periods makes sense only if those time periods are non-stationary and have a common stochastic trend – we call such time periods cointegrated. We are going to consider solely unidirectional dependency, singleequation models to analyze the relationships between the time periods. We are going to start by equation

$$Y_t = \beta X_t + a_t, \quad (1)$$

if the residues of the model are stationary, i.e. type I(0), then the time periods X_t are cointegrated, if they moreover have the character of a white noise, sufficient for the analysis will be model (1) and parameters β are going to be long-term multipliers determining longterm balanced relation (equilibrium) Y_t in regards to particular X_t .

Results of Dickey-Fuller (Dickey, Fuller 1979) test of unitary roots which are listed in Table n. 1, imply that the analyzed time periods are on 5% level of significance, and except for direct foreign investments, are non-stationary. Further, results of expanded Dickey-Fuller test ($tADF = -1,8315$, $Prob = 0,0642$) on the 5% level of significance confirmed that the residues of model (1) are stationary.

Table n. 1: Dickey-Fuller tests of time periods

| Time periods | TADF | Prob |
|----------------------------|-----------|--------|
| Apartment price SA | 0,445891 | 0,8068 |
| Unemployment | -0,581771 | 0,4603 |
| Wage SA | 4,986368 | 1,000 |
| Direct foreign investments | -3,713787 | 0,004 |
| Interest rate | -1,978896 | 0,0467 |
| Apartments built SA | -0,500575 | 0,4943 |
| Divorces SA | -0,665988 | 0,4236 |
| Marriages SA | 0,933871 | 0,3073 |

Source: own analysis

The model in table 2 shows the relationship among unemployment rate, wages, direct foreign investments, apartments built, divorces, marriages and interest rates on the development of the prices of apartment style real estate.

Table n. 2: Relation analysis of time periods

| I/2002-IV/2014 | Coefficient | Std. Error | t-Statistic | Prob. |
|---------------------------------------------|-------------|------------|-------------|--------|
| Unemployment | -20,9102 | 1,4433 | -14,4870 | 0,0000 |
| Wage SA | 0,0108 | 0,0003 | 30,9053 | 0,0000 |
| Direct foreign investments | 0,0001 | 4,0984 | 3,0883 | 0,0035 |
| Interest rate | 17,8089 | 2,7110 | 6,5689 | 0,0000 |
| Apartments built SA | 0,0097 | 0,0014 | 6,4758 | 0,0000 |
| Divorces SA | 0,0108 | 0,0027 | 3,9909 | 0,0002 |
| Marriages SA | -0,0043 | 0,0014 | -3,0960 | 0,0034 |
| D1 | -24,2738 | 5,8968 | -4,1163 | 0,0002 |
| R-squared | 0.9619 | | D-W | 1,6488 |
| Diagnostics tests | | | statistics | Prob. |
| Breusch-Godfrey Serial Correlation LM Test: | | | 0,5561 | 0,5776 |
| Jarque-Bera Test | | | 4,2160 | 0,1214 |
| ARCH Test | | | 0,1378 | 0,7120 |

Note: SA seasonally adjusted; into the model, there has been added an artificial variable D1 (where I/2002=1, II/2002 a 4/2010=1), which eliminates deflections in given periods. Model lze zapsat ve tvaru

The model can be written down as follows:

$$-Price\ of\ apartmnt\ SA_t = -20,9102\ unemployment + 0,0108\ wage\ SA_t + 0,0001\ direct\ foreign\ investment_t + 17,8089\ interest\ rate + 0,0097\ apartment\ built\ SA_t + 0,0108\ divorces\ SA_t - 0,0043\ marriages\ SA_t - 24,2738D1_t \quad (2)$$

The relation between the unemployment rate and price of an apartment is inversely proportional, that is, with an increase in unemployment the price of an apartment decreases. This development seems to be logical, because with increasing unemployment, the available income decreases as well as real estate demand, which in the end leads to lowering of the real estate market prices. As for observed demographic factors, divorces affect prices of apartments positively, since with a growing number of divorces, the demand for apartments increases as well (due to a divorce a new household is created).

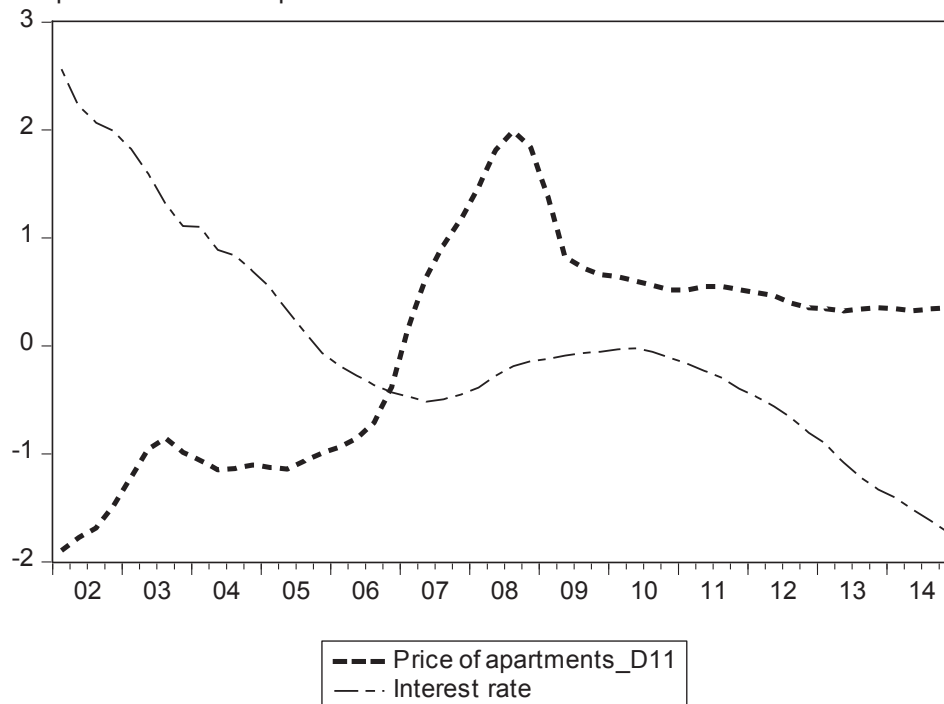
From the analysis' result it is apparent that interest rate significantly influences prices of apartment, however the value of the parameter is positive in contrast to expected negative value. Therefore, we will focus on the effect of the interest rate on loans provided to households in relation to the prices of apartments.

Analysis of the relationship between real estate price and interest rate

A decrease in interest rate with otherwise unchanged conditions should push the prices of apartments upwards, since the costs related to financing their purchase via loans is now lower and thus demand for apartments grows.

Results obtained from the model however reject this logical explanation. Graph n. 3 represents the development of prices of apartments and interest rates in years 2002-2014 and it is apparent that until year 2008, the development of these measures is in accordance with the above mentioned logical explanation. However, since 2009 there is a discrepancy between the development of the measures and theoretical presumptions, because with decrease in interest rate, the prices of apartments are not growing, but stagnating, even slightly decreasing.

Graph n. 3: Prices of apartments in relation to interest rate



Source: CNB, ARAD – time period system, own analysis

The development shown on graph n. 3 and regress analysis are performed below. A single-equation linear model (1) has been used.

The model of simple linear regression for 2002-2008 implies that the model's residues are stationary ($tADF = -4.390564$, $Prob = 0.0025$), but auto-correlated ($t = 933.0438$, $Prob = 0.000$). That is why it is possible to use the ADL model (Arlt and Arlt, 2009) with delayed analyzed time periods added in order to filter out auto-correlation (delays up to time $t-4$, which corresponds with one calendar year, since the data sets are quarterly).

The resulting ADL model for time period of 2002-2008 is following:

$$\text{price of apartments } SA_t = 79,94614 + 2,235938 \text{ price of apartments } SA_{t-1} - 2,593755 \text{ price of apartments } SA_{t-2} + 1,922518 \text{ price of apartments } SA_{t-3} - 0,841636 \text{ price of apartments } SA_{t-4} + 55,10601 \text{ interest rate } a_t - 63,52406 \text{ interest reate } t_{-1} + 35,92133 X_{t-2} - 29,78637 \text{ interest rate}_{-4} \quad (3)$$

Due to the non-stacionarity of time periods, this model has been rewritten into error correction model (EC) which allows long-term investigation of the relationship between prices of apartments and interest rate.

The model can be written down as follows:

$$\Delta \text{price of apartments } SA_t = 79,94614 + 55,10601 \text{ interest rates}_t - 63,52406 \text{ interest rates}_{t-1} + 35,92133 \text{ interest rates}_{t-2} - 29,78637 \text{ interest rates}_{t-4} - 0,27693 (\text{price of apartments}_{t-1} - 3,1575 \text{ interest rates}_{t-1}) \quad (4)$$

Regression analysis of time periods confirms the existence of inversely proportional relationship between the development of interest rate and the development of apartment prices.

In delay one, the parameter comes out as negative, which corresponds with the described logical explanation, that is with the decrease of interest rate the first difference of real estate prices increases and vice versa.

Based on the equation it is obvious that at time t , the interest rate is directly proportional to the change in apartment price at the same time, however at time $t-1$ it is inversely proportional. This development is continually repeated also in the following period.

The long-term relationship between time periods is expressed by long-term multiplication β and its estimate of $-3,1575$ confirms the inversely proportional relation between apartment prices and interest rate shown on graph n. 3.

Diagnostic check indicates that nonsystematic part of the model is conditionally homoscedastic ($t=1,598386$, Prob=0,2021), non-autocorrelated ($t=0,849696$, Prob=0,4500) and has normal distribution ($t=1,271050$, Prob=0,529657).

We further analyzed the relation between apartment prices and interest rate for years 2009-2014. Also in this case, according to the results of ADF test, the residues of the model at 5% level of significance are stationary, but autocorrelated. To analyze the time periods we have used again the ADL model, which, for the period of 2009-2014 can be written down as follows:

$$\text{price of apartments } SA_t = 168,9761 + 0,267318 \text{ price of apartments } SA_{t-1} + 43,90632 \text{ interest rate}_t - 40,54948 \text{ interest rate}_{t-1} + 18,32182 D2_t \text{ (There has been inserted an artificial variable } D2 \text{ (where } 1/2009=1) \text{ into the model to eliminate deflections in given period.)}$$

(5)

Due to the non-stacionarity of time periods, also this model has been rewritten into the model of error correction (EC).

$$\Delta \text{price of apartments } SA_t = 168,9761 + 43,90632 \text{ interest rate}_t + 18,32182 D2_t - 0,730682(\text{price of apartments}_{t-1} + 4,59 \text{ interest rate}_{t-1})$$

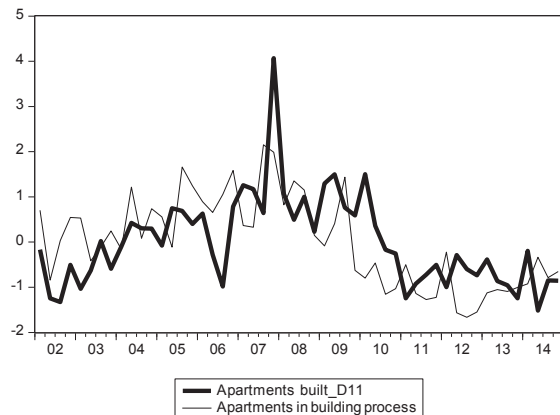
(6)

The results indicate, that the non-systematic part of model is conditionally homoscedastic ($t=1,142901$, Prob=0,6818), non-autocorrelated ($t=2,277652$, Prob=0,1329) and has normal distribution ($t=1,283603$, Prob=0,526343). The parameter ($t=2,277652$, Prob=0,1329) that characterizes long-term relation between time periods is 4,59.

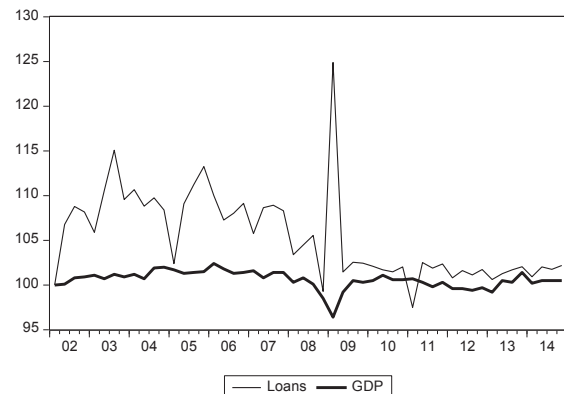
The positive value of this multiplier confirms the directly proportional relation between apartment prices and interest rate shown on graph n. 3, this indicates that apartment prices are stagnating since year 2009 and in some periods they even decrease slightly along with the decrease of interest rate. The causes of this stagnation of prices can be seen, for example, in the behavior of developers, who were forced to lower their margins due to the competition and the necessity to sell remaining built apartments.

Based on graph n.4 that represents the situation of apartment construction in Czech Republic in 2008, it is evident that the apartment prices are stagnating or even declining at the expense of their quality. This indicates lower standards of materials used as well as construction in less pleasant locations

Graph n. 4: Apartments commenced and finished and loans



Graph n. 5: Quarterly growth in GDP



Source: CNB, ARAD – time period system, own analysis

It is furthermore interesting to follow the loan dynamics (graph n. 5) during the period of low interest rates; loan dynamics is a frequently discussed topic in the current low-inflation environment. That is because the increase in loans leads to the growth of monetary supply that plays a key role in the development of inflation, since weak loan dynamics sustain deflationary pushing.

A low level of interest rates is the product of low inflation and it leads to lowering the perceived risk as by investors, banks and households. Low interest rates can engage the attention of a household or an individual they may not have been considering purchasing a property themselves, but the favorable market conditions interest them enough to decide to purchase in the end.

At the same time, a relaxation of conditions for getting a loan approved by banks and the option of low installments of mortgage loans pose a risk that the indebted households will not be able to meet the commitments.

This risk poses a threat, especially in case of short fixation period – after its end there will be increase in costs related to loan installments without a corresponding increase in incomes. To avoid these risks some regulatory organs are applying two types of tools.

The first is based on capital regulation where regulators set an obligation to create higher capital requirements for newly provided loans.

The second option is rules adjusting conditions for providing loans by banks, so that mortgage loans are not provided too benevolently.

These rules for example prohibit postponement of loan's principle amount installments or loans with long maturity or they require stronger emphasis on a client's solvency. The most followed measure is loan to value ratio (LTV). That is the ratio of loan to market value of guarantee.

There are set limits so large loans are sufficiently collateralized by the value of the pledged real estate. This measure is followed by CNB which in its regular quarterly investigations of loan conditions reports opinions of selected banks about the change in the offer of loans via loan standards and conditions for loan approval. The CNB also publishes opinions about changes in loan demand.

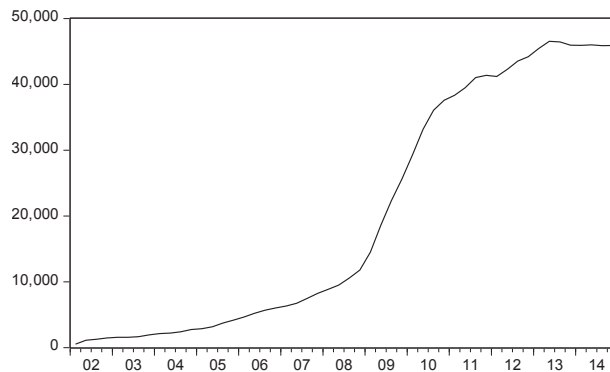
These results imply that loan standards of banks are easing for households and housing loan approval. As for offers, the average interest margin and requirements of banks in LTV ratio are declining. Loan demand is increasing based on better outlooks in the residential real estate market and consumer confidence.

The increase in loan demand can be seen also on graph n. 5 which shows the relation between the growth rate of GDP and loans. The amount of housing loans provided to Czech households is increasing long term and it exceeds the growth of GDP.

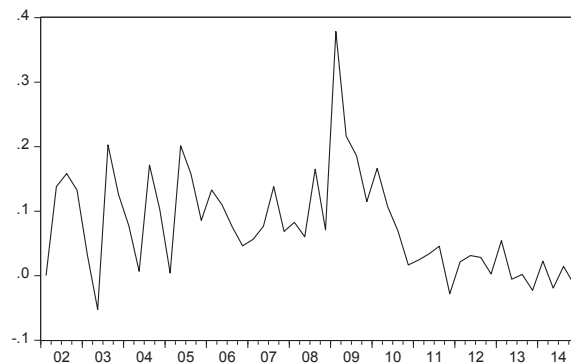
The following graphs represent the overall and annual development of loans intended for purchasing real estate that were classified as failed. Based on graph n. 6 it is evident that failed loans have increasing dynamics and in 2008 it is even possible to record dramatic growth.

This development might indicate persistent problems in the loan system of banks, insufficient loan analysis of clients as well as worsening of economic situations of households, an increase in unemployment, a decrease in available income, and similar factors.

Graph n. 6: Loan development
failed loans



7: Annual development of failed loans
annual increase of failed loans



Source: CNB, ARAD – time period system, own analysis

On the other hand graph n. 7 makes it apparent that the annual increase in failed loans is not significant, and even after the financial crisis of 2008 it has a decreasing tendency.

Nevertheless, it is important to emphasize that the amount of failed loans can be much larger since the analysis does not include other entities that are taking part in real estate market and can trade real estate with various investment intentions. If we take into account that it is the households that have the crucial part in the total amount of loans provided in order to purchase real estate, the time periods are sufficiently trustworthy.

5. SUMMARY AND CONCLUSIONS

This paper was dedicated to the topic of price bubbles in the Czech real estate market. Based on the analysis of relative measures there was not an apparent existence of any price bubble on the current market.

The highest value for measure price to income was recorded in Prague since a household in the capital city need twice as long to earn enough to purchase their own housing than households in other regions in Czech Republic. The price to rent measure has a growing tendency after the financial crisis in 2008 with the growth being more prominent in Ustecky kraj.

Based on the economic analysis we have found that prices of apartments are influenced by the unemployment rate, wages, direct foreign investments and the amount of apartments built. As for demographic factors, the prices of apartments are positively influenced by divorces and negatively by marriages.

The prices are further significantly influenced by interest rate, although in a different way than was expected. The logical assumption was that during a period of low interest rates the prices of real estates will grow due to the costs of financing falling.

This assumption was not confirmed and the discrepancy that has been followed since 2008 was further confirmed by regression analysis of the relation between prices of apartments and interest rate. The causes of apartment crisis stagnation are considered to be the lowering of quality of newly built apartments and lowering of developers' margin, whose reaction was due to competition and the necessity to sell apartments that were already built.

Since the central bank currently has expansive monetary policy and the interest rates are at their historical minimum, there are concerns that the increase of liquidity in the economy will lead to an increase in asset prices via the transmission mechanisms of the monetary policy. For these reasons we analyzed the development of provided loans and the relationship between the development of newly provided loans and loans that were classified as failed.

As a result we have found that the amount of loans provided to households in order to purchase real estate has a growing trend and in some cases it exceeds the rate of growth of GDP. Based on the time periods it is further evident that failed loans have increasing dynamics. This growth was dramatic during the world financial crisis. However, in the past years this development shifted towards having a decreasing trend.

Since the real estate prices are not warning about a price bubble in the real estate market, it can be assumed that neither banks nor regulators will dramatically change the conditions to make them stricter. A adjustment of loan conditions is more likely if there is an increase in the amount of unpaid loans so that the creation of the price bubble can be prevented. This potential tightening of conditions should not influence the market prices of real estate, nor the value of guarantees significantly.

On the part of regulators we can expect a slight tightening of conditions for example in the area of limiting the loan amount. This tightening should not influence the asset prices on the real estate market since one hundred percent housing loans represent a small portion in the total amount of loans.

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THE INFLUENCE OF ORGANIZATIONAL TRUST ON JOB PERFORMANCE: MEDIATING ROLE OF EMPLOYEE ENGAGEMENT

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[dx.doi.org/10.18374/IJBR-16-5.4](https://doi.org/10.18374/IJBR-16-5.4)

ABSTRACT

The purpose of the study was to assess the effect of organizational trust on job performance. The study also investigated the mediating role of employee engagement in the relationship between organizational trust and job performance. Data were collected through a self-administered questionnaire from a sample of 268 employees working in electrical industry. Structural equation modeling was utilized in the present research to test the hypotheses.

Results suggested that job performance was related to organizational trust and also to employee engagement. Additionally, results supported the hypothesis that employee engagement partially mediated the relationship between organizational trust and job performance.

The present study contributed to the discourse on organizational trust and job performance since it established an association between the two variables. Improving job performance required building a healthy and good culture of organizational trust among employees. Theoretical and practical implications were also discussed

Keywords: *organizational trust, work engagement, job performance*

1. INTRODUCTION

One of the most critical issues facing all organizations today is how to improve organizational trust at work. It is becoming increasingly recognized that trust in the workplace is a critical factor leading to increasing performance in organizations (Gould-Williams, 2003).

Within the organizational context, trust can take several forms. Interpersonal trust involves employee's trust in superiors, peers, or subordinates, while organizational trust can be referred to as employees' collective perceptions and expectations towards their organization. A study of trust between a school principal and faculty by Tschannen-Moran and Hoy (1998) showed that supportive leadership on the part of the principal influence the degree of trust subordinates felt for the principal but did not engender trust among the faculty for one another.

Businesses need employees with high job performance to accomplish their organizational objectives and remain commercially competitive (Sonnentag and Frese, 2002). Job performance is a behavior that is consistent with organizational objectives and is generally assessed on the basis of the employees' achievements of these objectives (Mulki et al, 2015). Strong competition among organizations and market changes compelled management of these organizations to give more attention to human resources' performance. Organizations have realized that employees are fundamental and have viewed them as valuable assets in their organizations. The importance of job performance level causes a challenge faced by management regarding selecting, employing, and motivating manpower.

The major contribution of the present research is linking both organizational trust and employee engagement to job performance. Employee engagement can be defined as a positive, fulfilling, work-related state of mind that is characterized by vigor; dedication, and absorption (Schaufeli, et al, 2002). Previous research has shown that work engagement is associated with superior performance (Demerouti and Cropanzano, 2010). Regression coefficients between work engagement and organizational citizenship behavior (organization) provided evidence that there was a significant relationship between the two variables (Matta et al, 2015).

Macey and Schneider (2008) have argued that presence of a supportive and trusting work environment is crucial for enhancing employee engagement.

Based on the above discussion, it is suggested that employee engagement mediates the influence of organizational trust on job performance. There is a lack of research in the electrical corporations in Jordan regarding organizational trust, employee engagement, and job performance. This research contributes to the extant knowledge by investigate the mediating role of employee engagement on the relationship between organizational trust and job performance. For conducting the investigation, the author developed a model to be tested through utilizing structural equation modeling.

2. CONCEPTUAL FRAMEWORK AND HYPOTHESES

2.1 Organizational Trust

People who have trust in their organization believe that management have good intentions and think positively of all behaviors and decisions issued by management. One of the managers' roles in this regard is to create a climate of trust in organizations.

Researching trust can be conducted either from an individual or an institutional perspective (Judeh, 2011). Individual trust can be referred to as interpersonal relationships, while institutional trust is referred to as a part of organizational relationships. Institutional or organizational trust may be defined as one party's willingness to be vulnerable to another party based on the belief that the other party will be confident, open, concerned, and reliable (Mishra, 1996). It is a psychological state, which depends on expectations regarding the organization systems, procedures, policies, and behavior of management. In order to build the trust in the organizations, it is necessary that managers should act ethically, and their behavior should match with organization's shared values. Managers should pay special attention to maintaining organizational trust in the workplace.

Organizational trust can be viewed as essential for organizational success and effectiveness. A study conducted by Joseph and Winston (2005) demonstrated that perceptions of servant leadership were correlated positively with both leader trust and organizational trust. The empirical results of Rua and Costa study (2016) confirmed that transformational leadership positively enhanced organizational trust. The research findings and conclusions of Quach's (2013) study showed that there was a positive correlation between organizational trust and communication effectiveness in workplace.

The lack of trust in organizations can lead to less enthusiasm for exerting maximum efforts in work and may lead to less organizational effectiveness. Lower levels of trust can lead to negative consequences such as fear, suspicion, uncertainty, low morale, low commitment, and reduced job satisfaction (Mishra & Morrissey, 1990).

Since the existence of a supporting organizational trust environment is an essential factor in achieving organizational effectiveness, management should give more importance to sustain employees' trust in their organizations.

Researchers assumed that employee engagement can be correlated to organizational trust. Previous research demonstrated that organizational trust was positively associated with work engagement (Agarwal, 2014; Ugwu et al, 2014; Wang and Hsieh, 2013). In a related study, Hough et al (2015) provided evidence that the relationship between trust and work engagement was positive and significant.

Based on the above discussion, it can be expected that higher level of organizational trust would lead to better performance in the workplace. Therefore, the present study develops the following hypotheses:

H1: Job performance is related to organizational trust.

H2: Employee engagement is related to organizational trust.

2.2 Job Performance

As stated previously, the aim of the current research is to study the role of employee engagement as a mediating variable on the relationship between organizational trust and job performance.

Job performance is a behavior that is consistent with organizational objectives and is generally assessed on the basis of employees' achievement of these objectives (Mulkia et al, 2015). Motowidlo and Van Scotter (1994) argued that there were two dimensions of employee performance; task performance which is the behavior associated with maintaining and servicing an organization's technical core, and contextual performance which refers to the interpersonal skill knowledge that supports the broader social environment. In addition to that, citizenship behavior may be added as a third dimension to job performance, since it can contribute, in an indirect way, to achieving organizational goals.

As for attempts to develop models for job performance Werner's (1994) offered and assessed a two-factor model concludes that the job performance includes two separated characteristics: role prescribed (in-role) characteristics and citizenship (extra-role) characteristics.

In-role performance refers to a behavior that is part of the requirements as described in job descriptions (Yavas et al, 2013), while extra-role performance represents behaviors not formally required by any particular job, yet which help to form the social context of all jobs, thus facilitating effectiveness (Stoner et al, 2011). Since, in-role performance involves patterns of behavior that are directly involved in producing goods or services, or activities that provide indirect support for the organization's core technical processes (Van Scotter et al, 2000), the study focuses on the core-task behavior through measuring the in-role performance.

Low performance can be a bad indicator of voluntary turnover. The cost of an individual quitting organization and get a replacement for him may include direct costs as advertising, recruiting, and training, as well as indirect costs, such as, lost work hours, cost of overtime, and cost of errors made by the new replacement (Judeh, 2012) This drain demands management to gain the trust of employees, encourage their engagement, and motivate them to stay in the organization.

Trust was seen as a significant contributor to organizational performance because employees' discretionary contributions cannot be easily replicated or imitated (Jones and George, 1998).

The study of Anitha (2014) stated that employee engagement had significant impact on employee performance. At the same time, results of Rich et al (2010) study revealed that engagement mediates the relationship between value congruence, perceived organizational support, and core self-evaluations, and job performance. Therefore, it is suggested that maintaining good relations with employees can help increase job performance level.

Arising from the above literature review on job performance, the following hypothesis can be presented:

H3: Job performance is related to employee engagement.

2.3 The Mediating Role of Employee Engagement

Employee engagement can be considered an important factor that includes employee commitment toward the organization. Employee engagement is encouraged through creating an atmosphere of trust and support by management. Organizations usually reward employees who are willing to work harder and for longer working hours. Persons who are engaged to a high degree are expected to be motivated by their work and they are inclined to work harder than others.

Employee engagement is a two-way process through which employees are highly engaged in work and management of organizations respond and be aware of the needs of their employees. Social exchange theory depends on trust and feeling of obligation and is based on reciprocity.

In fact, there can be an amalgamation in employee engagement meaning with some other variables, such as organizational commitment, job satisfaction, and job involvement. However, recent empirical evidence

indicates that employee engagement can be distinguished from organizational commitment, job satisfaction and job involvement (Christian et al., 2011). Furthermore, Schaufeli and Bakker (2010, p. 15) assert that work engagement has added value over and above these related concepts.

Results of Alfes (2013) found that employee engagement was strongly linked to individual performance and fully mediates the link between both perceived HRM practices and perceived line manager behavior and self-report task performance. Karatepe (2013) showed that the fully-mediated model provided a better fit to the data than did the partially mediated model and further indicated that work engagement act as a full mediator of the impacts of perceptions of organizational politics on affective organizational commitment, extra-role performance, and turnover intentions

Furthermore, a model highlights the mediated effects played by Work Engagement in the relation between job resources and Organizational Citizenship Behaviors (Sulea, 2012). Another study conducted by Agarwal (2014) demonstrated that work engagement mediates the relationship between Leader-Member Exchange and innovative work behavior, and partially mediates intention to quit (Agarwal, 2014). Brown et al (2015) found a positive relationship between workplace performance and average employee trust. Trust in the organization and work engagement was also correlated with each other (Stander et al., 2015). Based on the above discussion, the present study develops the following hypothesis:

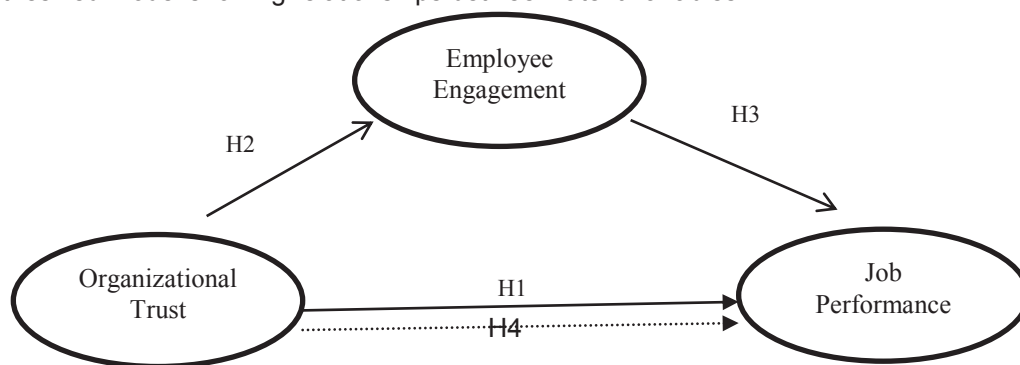
H4: Employee engagement mediates the relationship between organizational trust and job performance.

Building an engaged employees has become a core objective for human resource managers because empirical research has shown that employee engagement can make a considerable contribution to the organization's bottom line (Gruman and Saks, 2011).

Thus, the relationship between and job performance and organizational trust can be expected to be mediated by employee engagement.

The proposed theoretical model which shows the relationships among all latent variables and reflexes the two hypotheses is depicted in Figure 1.

Figure 1
Hypothesized model showing relationships between latent variables



The current research is conducted on employees working with electrical corporations listed in Amman Stock Exchange in Jordan. Researchers may take into consideration the inherent similarities and differences in the cultural values between Jordanian and western countries' employees. Although there are too many similarities between Jordan and western organizations, there are still some differences between them. This is probably due to the importance of interpersonal and social relationships in Jordan which can influence employees' attitudes and behaviors at work.

The current study provides an opportunity to explore the mediating effect of employee engagement on the relationship between and organizational trust and job performance within the context of non-western organizations.

3. METHOD

3.1 Participants

Questionnaires of the current research were distributed to a sample of 300 employees working with electrical corporations in Jordan. The total responses returned and found suitable for statistical analysis were 268 questionnaires, for a response rate of 89.3 per cent. Furthermore, all the participants were assured that information provided by them would be dealt with in strict confidence.

All responses were measured using a seven-point Likert scale, ranging from (1) strongly disagree to (7) strongly agree.

Of the total 268 participants, 69.4 percent (n=186) were male and 30.6 percent (n=82) were female. The ages of participants ranged between 20 years and 52 years, with an average of 32.2 years and standard deviation of 8.6. The demographic profile of the participants is presented in Table I.

Table 1
Demographic Characteristics

| | Characteristics | Number | % | |
|--------------|-----------------|------------|--------------|--|
| Gender | Male | 186 | 69.4 | |
| | Female | 82 | 30.6 | |
| Total | | 268 | 100.0 | |
| Age | 26 and less | 81 | 30.2 | |
| | 27-33 | 75 | 28.0 | |
| | 34-40 | 66 | 24.6 | |
| | 41-47 | 25 | 9.3 | |
| | 48 and above | 21 | 7.9 | |
| Total | | 268 | 100.0 | |
| Tenure | 5 and less | 71 | 26.5 | |
| | 6-10 | 39 | 14.6 | |
| | 11-15 | 69 | 25.7 | |
| | 16-20 | 63 | 23.5 | |
| | 21 and above | 26 | 9.7 | |
| Total | | 268 | 100.0 | |

Table 1 showed that around 30.2% (n=81) of the participants were 26 years old and less, while 26.5% (n=71) of them had tenure of service in the workplace for 5 years or less.

3.2 Measures

The survey instrument used for the current study contained four sections: employee engagement, organizational trust, and job performance.

3.2.1 Employee engagement: The Utrecht Work Engagement Scale (UWES-9) developed by (Schaufeli et al., 2006) was used as a measure of the level of employee engagement. This instrument consists of three sub-dimensions: Vigor (3 items), Dedication (3 items), and Absorption (3 items). Sample items, "At my work, I feel bursting with energy" for vigor, "My job inspires me" for dedication, and "I am immersed in my work" for absorption. Cronbach alpha values for the vigor, dedication and absorption were 0.83, 0.84 and 0.79 respectively, while the Cronbach alpha for the aggregated scale was 0.87 indicating an acceptable degree of internal reliability.

3.2.2 Organizational Trust: This variable was measured using three items: the first two were drawn from Cook and Wall (1980), as described in Costigan (1988) and the third one was from Costigan (1988), with minor changes made in wording to adapt to the research objectives. Sample item of Costigan statement, "Our corporation has a history of rewarding high performing employees". Cronbach Alpha of .74 for the three items of organizational trust was also acceptable.

3.2.3 Job Performance: This variable was assessed using four items of behavior developed by Williams and Anderson (1991). A sample item is "This employee adequately completes assigned duties". Cronbach Alpha of .81 for job performance items was acceptable.

3.2.4 Demographic variables: Demographic characteristics were measured depending on categories. Gender was measured as a dichotomous variable coded as 1 for male and 2 for female. Age and tenure were assessed by asking the participants to report them in absolute years, and then recoded in categories.

4. DATA ANALYSES

The models of the research were assessed by implementing Structural Equation Modeling (SEM) using Analysis of Moment Structures (AMOS) version 21. Before performing the structural equation modeling (SEM) analysis, all the latent variables were checked for normality and the results showed that all of them were moderately skewed.

Exploratory factor analysis (EFA) was performed to all items measuring the study variables with principal axis factoring and Varimax Rotation.

As a result of EFA, five interpretable factors were extracted from the highest loading items on them, vigor, dedication, absorption, organizational trust, and job performance. To assess the EFA, factor loadings with less than .40 were excluded from the construct. Factor loadings were acceptable and varied from .695 for the first item of Vigor to .874 for the second item of organizational trust.

Convergent validity was tested by assuring t-value of larger than 1.96 at the .05 level for all item loadings (Anderson and Gerbing, 1988; Schumacker and Lomax, 2010). All items yielded significant loadings, providing evidence of high convergent validity (Hair et al., 2005).

To confirm results from EFA, the Confirmatory Factor Analysis (CFA) of all items with the 268 cases having no missing values was conducted and the relationships between constructs were evaluated. The average variance extracted (AVE) values for all the factors were greater than .50, indicating the convergent validity of all the constructs (Hair et al, 2005). To establish discriminant validity, the AVE of each construct was higher than the corresponding squared correlations between that construct and all other constructs in the model.

The average variance extracted (AVE) values for all the factors which were greater than .50 supports the convergent validity of all the constructs. In order to establish discriminant validity, the AVE for each construct should be greater than the squared correlations between a construct and all other constructs in the model (Hair et al., 2005).

One of the most widely used techniques to address the issue of common method variance was Harman's one-factor or single-factor test (Podsakoff et al, 2003). All variables were loaded on one factor and to examine the common method variance and the result showed that factor did not account for a majority of the variance (40.73%) indicating there was no common method bias. Moreover, the fit of a model in which all indicators were loaded on one factor was examined and did not show fit to the data. Results of the CFA indicated that the ratio of X^2/df was (8.828), SRMR (.114), TLI (.618), CFI (.687), and RMSEA (.171). Furthermore, non-response bias analysis across time was used. Non-response bias analysis has to be done to compare between respondents and non-respondents. Extrapolation, one of the most widely used techniques, has been based on the assumption that late respondents are most similar to non-respondents because their replies took the most effort and the longest time (Armstrong and Overton 1977).

Early respondents were compared to late respondents and the results of the t-test did not show any significant differences, therefore, non-response bias was not a concern.

Bootstrapping technique, which involved repeatedly sampling from the data set and estimating the indirect effect in each resampled data set, was also used to establish bias-corrected estimates.

5. DATA ANALYSES AND RESULTS

5.1 Descriptive Statistics and Pearson Correlation Analysis

Table 2 represents the descriptive statistics and the bivariate correlations.

Table 2
Descriptive Statistics, Correlations Coefficient, and Reliabilities

| | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------------------|-------|-------|-------|-------|-------|--------|--------|--------|
| 1. Gender | NA | NA | (-) | | | | | |
| 2. Age | 32.18 | 8.60 | .020 | (-) | | | | |
| 3. Tenure | 12.17 | 3.24 | .001 | .081 | (-) | | | |
| 4. Employee Engagement | 3.652 | 1.015 | -.034 | .020 | .085 | (.873) | | |
| 5. Organizational Trust | 3.387 | 0.947 | .032 | .074 | .010 | .335** | (.744) | |
| 6. Job Performance | 4.018 | 1.076 | .077 | .118 | -.066 | .328** | .398** | (.811) |

Note: Alpha is represented in parentheses along diagonal; **p < .01

The correlation coefficients shown in the table provide insight on the bivariate relationships among the variables under study. As also shown on Table 2, there were significant correlations between employee engagement and each of organizational trust ($r = .335$, $p < .01$) and job performance ($r = .328$, $p < .01$), and at the same time, between organizational trust and job performance ($r = .398$, $p < .01$). These coefficients also indicate no problem of multicollinearity because all the constructs are not highly correlated.

The results of the Pearson correlation test indicated that none of the three constructs: organizational trust, employee engagement, or job performance, was significantly correlated with any of the demographic variables. Moreover, results from the independent sample t-test revealed no significant differences in the responses with regard to job performance due to gender ($t = 1.258$, $p > .05$). In addition, results of the one way ANOVA revealed no significant differences in the responses with regard to job performance due to age of respondents ($F = 0.871$, $p > .05$) or tenure ($F = 1.944$, $p > .05$). Since including the insignificant demographic variables may distort the results of the study, these variables were not included in the research model. Solove et al (2015) and Carlson and Wu (2012) recommended excluding the demographic variables as control variables in the analysis when they exhibit no significant correlations with study outcomes.

5.2 Model Testing

All variables were subjected to a confirmatory factor analysis (CFA) to assess and validate the relationships between all latent constructs and their observed measures. All indicators significantly loaded onto the appropriate factor, with standardized factor loadings between 0.61 and 0.87 as shown on Figure 2.

The fit indices showed that the measurement model provided an adequate fit to the data. The ratio of chi-square normed by degrees of freedom X^2/df (1.19) met the threshold of less than 3.00 (Luarn and Lin, 2005). The other indices of SRMR (.040), GFI (.949), TLI (.987), CFI (.990), and RMSEA (.027) showed that the measurement model was an acceptable fit for the data. Hu and Bentler (1995) suggested that for GFI, TLI and CFI values of 0.95 and above are considered as indicating a good fit, while, for SRMR values below 0.08 depict an acceptable model fit. As for RMSEA, researchers recommend that values less than 0.05 indicate a good fit (Kline, 2005).

Prior to examining the structural model, it was necessary to study the mediating variable, employee engagement, and its dimensions. A model was first established to explore the relationship between each of the three constructs of employee engagement, vigor, dedication, and absorption, with organizational trust and job performance as a first-order model.

CFA was performed for the model and resulted in an unsatisfactory fit to the data as shown on Table 3. The first-order model required improvement to fit the data better.

Table 3
Goodness-of-fit Indices for First- and second-order Factor Models

| Model | CMIN/df | SRMR | GFI | TLI | CFI | RMSEA |
|--------------|---------|------|------|------|------|-------|
| First-order | 3.339 | .192 | .866 | .842 | .871 | .094 |
| Second-order | 1.224 | .045 | .950 | .985 | .987 | .029 |

Notes: CMIN = chi square.

Based on the poor fit of the first-order structure model, a second-order factor structure model was required to model the relationship structure of the three first order constructs together with organizational trust and job performance constructs.

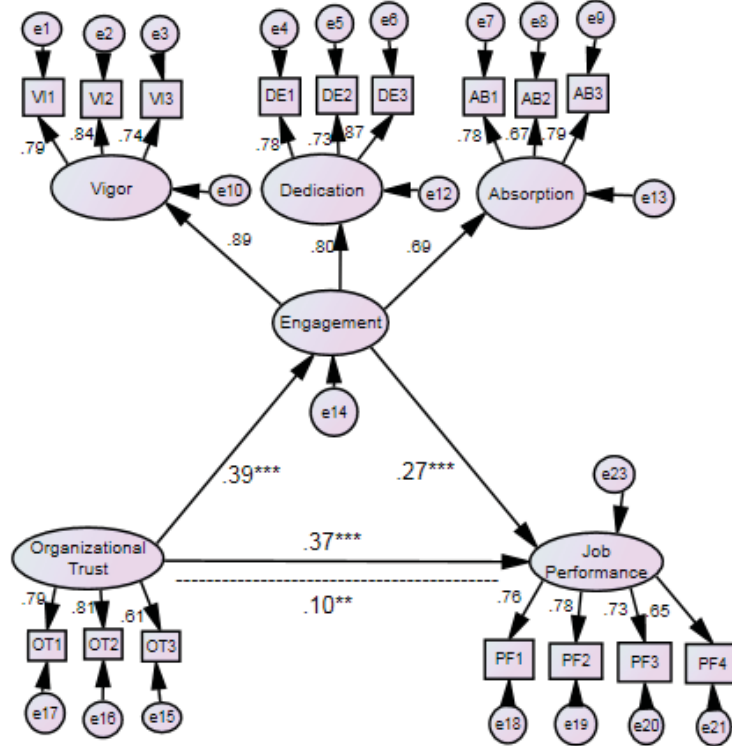
All the three factors, vigor, dedication, and absorption, were set to load on employee engagement as a second-order factor.

CFA was also applied to identify how the latent variables in the model are related to each other. Results of the CFA indicated that the ratio of X^2/df was 1.224. Results of other fit indices as shown in Table 3 suggested that the structural model fitted well with the sample data.

5.3 Hypotheses Testing

To determine the path coefficients between all variables, the bootstrapping procedure in AMOS was used. The CFA results depicted in Figure 2 showed that job performance was significantly related to organizational trust ($\beta = .37$, $p \leq .001$). Thus, H1 was supported. Employee engagement was significantly related to organizational trust ($\beta = .39$, $p \leq .001$), and job performance was also significantly related to employee engagement ($\beta = .27$, $p \leq .001$). Thus, H2 and H3 were supported. Figure 2 showed the standardized regression weights for the observed variables and standardized direct and indirect effects for the latent variables.

Figure 2
Standardized Regression Weights and Standardized Effects of the Model



Notes: * $p \leq 0.05$; ** $p \leq 0.01$; Note: *** $p \leq .001$

Results of the indirect effect of organizational trust on the relationship between organizational trust and job performance ($\beta = .10$, $p \leq .01$) provided support for H4. These results lead additional support for the theoretical rationale, which argues that organizational trust and employee engagement can affect job performance.

6. DISCUSSION AND CONCLUSIONS

The current study, which was conducted among employees working with electrical corporations in Jordan, aimed to provide evidence on the effect of organizational trust on job performance. Additionally, it aimed to assess the mediating effect of employee engagement on the relationship between organizational trust and job performance.

Improving job performance requires building a healthy and good culture of organizational trust among employees. The link between trust and employee engagement can be explained by the social exchange theory concept. Social exchange is premised on a long-term exchange of favors that is based on a diffuse obligation to reciprocate (Lee, 2004). Employees tend to reciprocate the treatment they receive from the organization in a manner they perceive to be fair (Blau, 1964). Good intentions and cooperative transactions between employees and top management or between employees and their organizations can produce good behavior and positive work attitudes, which will be reflected on job performance. No study has focused on the importance of employee engagement role in the relationship between organizational trust and job performance, therefore, the current research added to a growing knowledge of employee engagement.

The current findings of the research suggest that higher level of engagement and the more confidence in organization would lead to better job performance. Findings of the current study were consistent with previous studies in identifying a causal relationship between employee engagement and job performance

(eg. Dalal et al, 2012). The findings of this study also revealed that employee engagement mediated the relationship between organizational trust and job performance. Therefore, it can be suggested that organizational trust affects job performance directly as well as indirectly through employee engagements. Finding that there were no significant differences in the responses due to gender, age, or tenure factors resulted in excluding them as control variables from further analysis. More research should be conducted on the effect of demographic factors when investigating the relationship between employee engagement and job performance. The significant influence of employee engagement and trust on job performance indicates that management should emphasize more concern on employee engagement and on organizational trust as well.

The current study emphasize the importance of organizational trust which can be considered as a prerequisite for employees to do better job and evidenced that a high level of employee engagement can lead to better job performance. The study suggested that management better formulate their strategies and develop programs to enhance the employees' feeling of trust so as to improve job performance.

7. IMPLICATIONS AND LIMITATIONS

From a theoretical perspective, the current study provided further support for the effect of organizational trust on job performance. Moreover, the study went beyond the direct effect of organizational trust on job performance and investigated the role of employee engagement as a mediator between the two variables.

The current study added to the body of knowledge in managerial psychology by highlighting the importance of employee engagement as a mediator between organizational trust and job performance.

From a practical perspective, the current research provides a valuable input to the management of organizations in order to improve employees' performance and in turn, increase the organizational performance. The findings of the study provide further evidence that job performance is related to organizational trust. By demonstrating that employee engagement plays a significant role in the relationship between organizational trust and job performance, management is required to focus on both organizational trust and employee engagement. Trust can promote cooperation, especially in large organizations (La Porta et al., 1997) and increase the levels of interpersonal coordination enhancing behavior (McAllister, 1995). Therefore it is crucial for the management to build and support trust policies and procedures and make sure that they collaborate consistently with employees in a positive way.

The current study has two limitations which need to be mentioned. First, as we studied the mediating role of employee engagement on the relationship between organizational trust and job performance on employees working with electrical corporations in Jordan, the generalizability of the current findings needs to be demonstrated. Jordan is an emerging market and has liberal economic policies. It is one of the freest economies in the Middle East and North Africa. Since conducting the current research in Jordanian context may limit the generalization of its findings, it may be worthwhile for future researches to investigate different variables that may have effect on the relationship between organizational trust and job performance in other countries.

The second limitation of the study concerns gathering information through self-reports which might negatively affect the results. Such effects might be avoided in future studies by using more objective assessments of trust, engagement, and job performance.

Despite the above-mentioned limitations, it is believed that the present study contributes to the practical aspects of the field of organizational trust, employee engagement, and job performance. Further investigation may be conducted by scholars and researchers on other sectors in Jordan as well as on other countries. Future studies may include the mediating role of other variables, such as management styles, organizational justice, and organizational citizenship behavior on the relationship between organizational trust and job performance.

ACKNOWLEDGEMENTS:

The author is grateful to the Applied Science Private University, Amman, Jordan for the partial financial support granted to this research project Grant No. DRGS-2014-2015-170

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APPLICATION OF A THREE DIMENSIONAL MODEL FOR EFFECTIVE KNOWLEDGE TRANSFER FROM HEIs TO BUSINESS FIRMS IN KSA

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[dx.doi.org/10.18374/IJBR-16-5.5](https://doi.org/10.18374/IJBR-16-5.5)

ABSTRACT

The relevancy of management institutions' research to the practicing managers has always been a debatable issue. The present study adapts the three dimensional model of knowledge transfer propounded by Simmonds et.al (2001) to examine the influence of academic community (read as western management ideas) on the management practice of business organizations in KSA.

Based on a survey of 300 Saudi managers from public and private organisations in Riyadh region we found that the majority of them were familiar with the key management concepts. Moreover, the primary sources of these concepts are from the academic institutions, followed by experience, association and involvement in that order. However, managers in the kingdom in comparison to the western managers perceive less utility for these ten key-management concepts.

Keywords: Knowledge Transfer, Saudi Arabia, SDRA Model, HEIs, Key Management Concepts.

1. INTRODUCTION

The relevancy of management institutions' research to the practicing managers has always been a debatable issue. A significant amount of researchers (see e.g. Pfeffer and Fong (2002), (Porter & McKibbin, 1988), advocate that executives merely turn to academic research findings for typical daily management problems and strategy formulations (Rynes, Bartunek, & Daft, 2001). Is the same also true in the case of content taught by the higher education management institutions? The questions was examined by Simmonds, Dawley, Ritchie, and Anthony (2001), but the results were of mixed nature. There is also a lot more left to explore and conclude that whether the academic institutions being a major source of knowledge creation, dissemination and lifelong learning are sufficient enough to fulfill their intended purpose.

The current study is done in the perspective of Kingdom of Saudi Arabia (KSA). KSA being one of the emerging and developing economies lays down the hope on educational institutions to transfer it as a knowledge economy. But higher education sector of KSA is still in infant stage. Unlike the other developing nations the transfer of management practices from the developed nations seems more viable option. Despite the debate of the applicability of these concepts in the present scenario it is being practiced.

The present study adapts the model of knowledge transfer propounded by Simmonds et.al (2001) to examine the influence of academic community (read as western management ideas) on the management practice of business organizations in KSA. We will call this model as *SDRA knowledge transfer model*. In the following paragraphs, we will briefly describe the three dimensions of the *SDRA knowledge transfer model*.

HEIs are the key source for creation and dissemination of managerial knowledge in the society (Gera, 2012). The behavior of the people are adapted as per their knowledge acquisitions and the interpretations about their environments. Hence the organizations focused on transfer of knowledge have a competitive advantage over others (Dayasindhu, 2002). The better knowledge transfer facilitates the managers/decision makers to take better action and improve the decision making process (Hernandez, 2000), (Ramirez, 2008) etc. As per Christensen (2003), "Knowledge transfer is about identifying (accessible) knowledge that already exists, acquiring it and subsequently applying this knowledge to

develop new ideas or enhance the existing ideas to make a process/action faster, better or safer than they would have otherwise been.” The spectrum of knowledge transfer covers not only the new knowledge but it facilitates in creation of more cognizant and productive individuals (Moshonsky, 2013). Thus, the three dimensions of *SDRA knowledge transfer model* along with their hypotheses are as follows:

Dimension 1: Sources of Knowledge

The knowledge source of working managers could be many. As per Weisman and Anthony (1999) ‘executive learns through *involvement, direct education, experience* and *association*’. Rulke, Zaheer, and Anderson (2000) confirm that manager appears to acquire knowledge through “relational channels” which involve personal contacts and “non-relational channels” like company newsletters and trade magazines etc. Further it is confirmed by Simmonds et al. (2001) that a manager learns the academic knowledge through the business peers inside and outside the organisation. According to Werr, Blomberg, and Löwstedt (2009) the most important source of knowledge acquisition of a manager is the external relationship with various stakeholders. Tippmann, Sharkey Scott, and Mangematin (2014) state that the middle level managers, gain the organisation’s knowledge by their routine search of knowledge that usually ends in copying the general solutions to the problems encountered.

Hypothesis 1: There is a positive response difference existing among the source constructs.

Dimension 2: Familiarity

Familiarity of a popular known management concept is the knowledge of the concepts itself. As per Goodman and Leyden (1991), familiarity to something is the specific knowledge about a phenomenon that one might have. Familiarity can be a mere surface knowledge of the concept but it doesn’t mean that a manager uses it in its practical implementation. Far and wide, there are common management theories and concepts like MBO, Quality Circles etc. are the most well-known and used by managers (Flores & Utley, 2000). Similarly the managers are expected to have the technical knowledge of common management concepts taught in business schools.

Hypothesis 2: There is a positive relationship between practicing managers Familiarity and the Academic constructs.

Dimension 3: Usefulness

Usefulness of the concept is determined by the degree and consistency of its usages in day to day functioning and problem solving (Flores & Utley, 2000). Ample amount of arguments and researches made to find the consistency between the academic research and their use in practical field that undoubtedly renders the mixed results (Baldrige, Floyd, & Markóczy, 2004; Gera, 2012; Rynes et al., 2001) etc.

Hypothesis 3: There is a positive relationship between Academic constructs and Usefulness of these to practicing managers.

2. METHODOLOGY

The three dimensions of *SDRA knowledge transfer model* discussed above were applied in the form of a survey instrument to collect the primary data for the present study. But the most challenging task was to come up with the widely recognised and accepted management concepts equally mapped in the context of the contents taught by Saudi universities. The first task was to short list the management concepts, which was done by performing a content analysis of the strategic management courses of five universities (three public and two private) in Riyadh region. The content analysis identified fifteen major management concepts and after informally reviewed by the researchers, various faculty members, and graduate students reduced to ten key management concepts: (1) agency-principal relationships, (2) total quality management, (3) formal business planning, (4) change management, (5) business ethics, (6) supply-chain management, (7) attention to environmental issues, (8) globalization issues, (9) knowledge

management, and (10) customer relationship management. These ten concepts were repeated in each of three dimensions of *SDRA knowledge transfer model* to form three sections of the questionnaire.

Initially the survey was built using google forms and sent to a sample of 225 Saudi managers only in different public and private organisations in Riyadh region. Later on when no response was noted due to survey mostly landing in spam, it was re-administered using survey monkey paid website.

The stated hypothesis were tested by using the nonparametric. Based on the normality test (i.e. Shapiro-Wilk statistic) the data is found to be non-normally distributed and ordinally scaled so we relied on the non-parametric analysis tests.

3. RESULTS & DISCUSSIONS

Based on the sample size of three hundred surveys administered, 53 of them responded (i.e. response rate = 17.67%) but only 31 responses were taken to perform the analysis as they were complete in all respect. A cronbach alpha was used to measure the effectiveness of the three sections of the questionnaire (viz., Source = .806, Familiarity = .937 and Usefulness = .917). Thus, the alpha score as expected was found to be within the normal value ($\alpha \geq .65$) indicating that the scales used are highly reliable.

TABLE-1(A): WILCOXON SIGNED RANK TEST BY KEY MANAGEMENT CONCEPTS

| Key Management Concepts | Contrast | Z | Asymptotic Sig. (2 tail) |
|-------------------------|--------------------------------------------------------------|--------|--------------------------|
| 1 | Academic Institution > Friends | -2.496 | <.01 |
| | Academic Institution > Trade Societies | -3.464 | <.01 |
| | Academic Institution > Business Peers | -2.309 | <.05 |
| 2 | Academic Institution > Friends | -2.309 | <.05 |
| | Academic Institution > Trade Societies | -2.138 | <.05 |
| 3 | Academic Institution < Personal Experience | -2.828 | <.01 |
| 4 | No Significance contrast was cited between source constructs | | |
| 5 | Academic Institution > Trade Societies | -3.000 | <.01 |
| | Academic Institution > Business Peers | -3.051 | <.01 |
| 6 | Academic Institution > Friends | -2.673 | <.01 |
| | Academic Institution > Trade Societies | -3.317 | <.01 |
| 7 | Academic Institution > Business Peers | -2.530 | <.01 |
| 8 | No Significance contrast was cited between source constructs | | |
| 9 | Academic Institution > Friends | -2.138 | <.05 |
| | Academic Institution > Trade Societies | -2.887 | <.01 |
| 10 | Academic Institution > Trade Societies | -2.714 | <.01 |

TABLE-1(B): WILCOXON SIGNED RANK TEST (BY SOURCE)

| Contrasts | Z | Asymp. Sig. (2-tailed) |
|-------------------------------------|--------|------------------------|
| Association < Academic Institutions | -2.887 | <.01 |
| Involvement < Academic Institutions | -2.496 | <.01 |
| Experience > Association | -3.000 | <.01 |
| Involvement < Experience | -2.530 | <.01 |

Results for Dimension-1

Following the proponents of the *SDRA knowledge transfer model* to test the first hypothesis, we used the Friedman test followed by Wilcoxon signed rank test to rank and confirm the order of sources of knowledge for Saudi managers. Our results based on Friedman test were in confirmation i.e. differences existed among the means ($\chi^2 = 268.12$, $p .000$). In the SDRA study the order of importance from highest to lowest for western managers is academic experience, association, involvement and direct education (Simmonds et.al, 2001). However, for managers in Saudi Arabia the results differs viz., academic institutions, experience, association and involvement. This could be because of the unique culture of the Saudi society as well as lack of active involvement of trade societies and the nature of job. Table 1 (A) & (B) above summarize the Wilcoxon Signed Rank Test results by Key Management Concepts and the four Source constructs.

Results for Dimension-2:

The mean of familiarity constructs was 3.77 ($t = 3.860$, $p < .001$) suggests the ten concepts chosen in the current study were fairly familiar to the respondents which is also found to be quite similar to the earlier study (Mean = 3.74). Moreover, the Friedman test was conducted to test the null hypothesis whether there is a positive relationship between practicing managers familiarity and the ten key management concepts. Based on the Friedman test statistics ($\chi^2 = 17.326$, $p < .05$) the null hypothesis was accepted. Mean rank for the familiarity construct is shown in table 2:

TABLE-2: MEAN RANK BASED ON FAMILIARITY AND USEFULNESS OF KEY MANAGEMENT CONCEPTS

| Key Management Concepts | Familiarity Mean Rank | Usefulness Mean Rank |
|-------------------------|-----------------------|----------------------|
| 1 | 8 | 7 |
| 2 | 7 | 4 |
| 3 | 5 | 6 |
| 4 | 9 | 9 |
| 5 | 6 | 10 |
| 6 | 2 | 2 |
| 7 | 1 | 3 |
| 8 | 4 | 8 |
| 9 | 3 | 1 |
| 10 | 10 | 5 |

Results for Dimension-3:

The mean Usefulness for the ten key management concepts in the study was 3.90 ($t = -.571$, $p < .10$) which indicates that managers in KSA perceive less utility as compared to western managers in the earlier study (Mean = 4.95). Moreover, the Friedman test was conducted to test the null hypothesis whether there is a positive relationship between Academic constructs and Usefulness of these to managers in KSA. Friedman test statistics ($\chi^2 = 25.610$, $p < .00$) employed resulted in the acceptance of the null hypothesis. Mean rank for the usefulness construct is shown in table 2, above.

4. CONCLUSIONS & RECOMMENDATIONS

In general, for managers in Saudi Arabia the primary source of key management concepts are from the academic institutions, followed by experience, association and involvement in that order. This could be because of the unique culture of the Saudi society as well as lack of active involvement of trade societies and the nature of job.

The study also depicts that managers in KSA seem to be familiar with the ten key-management concepts which is also found to be quite akin to the earlier study. However, managers in the kingdom in comparison to the western managers perceive less utility for these ten key-management concepts.

The findings of this study in conjunction with the literature reviewed earlier lead to the following recommendations for practitioners and academicians:

1. It can now be summed that both the academics and the practitioners need to build a trust for common interests so that the knowledge base of academicians and the learning capacities of the organisations could be optimized.
2. University administrators should take knowledge transfer as a priority issue and make serious efforts for disseminating knowledge in various fields to practitioners. The knowledge transfer from the institutions should be customized to the requirements of organisations. It can be done in the form of short term consultancy, pilot studies and research collaboration partnerships.
3. For the organizations to have capable and trained personnel they should conduct knowledge and skills need assessments on a regular basis. The current knowledge and skills of workers are measured and matched against the evolving business needs. This assessment would provide the management an idea about the deficiencies of personnel with regard to knowledge and skills. Once deficiencies have been identified the organization should seek the help of academic institution in covering those deficiencies.
4. The academic institutions should on a regular basis make changes to the curriculum to meet the changing needs of the practitioners. So for doing this the academic institutions should have dialogue with the practitioners on a regular basis.
5. Knowledge will be of less value unless it is applied; therefore academic institutions should produce personnel that can solve problems of the government and business organizations.

ACKNOWLEDGEMENT

This project was supported by the Deanship of Scientific Research at Prince Sattam Bin Abdulaziz University under the research project # 169/A/1433.

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TESTING THE EFFECT OF INFORMATION SHARING ON COMPETITIVENESS AND DELIVERY PERFORMANCE AT MANUFACTURING INDUSTRY IN INDONESIA

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ABSTRACT

This study aimed to analyze the effect of information sharing toward competitiveness, information sharing toward delivery performance, and competitiveness toward delivery performance at manufacturing industry in Indonesia. This study conducted in two areas i.e.: Surabaya City, East Java Province and Makassar City, South Sulawesi Province of Indonesia. Number of sample were 90 companies which consist of 40 companies from Makassar, and 50 companies from Surabaya. Respondents were production/ operation managers of manufacturing companies. This study used two kinds of data, namely primary data and secondary data. Primary data collected through questionnaire instrument, whereas secondary data collected by relevant documents such as organization profile, and production report in the organization. The data analyzed with using both descriptive statistics and partial least square (PLS). The results show that information sharing has a positive and significant effect on competitiveness. Information sharing also has a significant effect on delivery performance. Then, competitiveness has a significant effect on delivery performance. In addition, delivery performance more influenced by variable of competitiveness than information sharing.

Keywords: *information sharing, competitiveness, delivery performance, manufacturing industry, Indonesia.*

1. INTRODUCTION

The manufacturing industry has an important role in many countries of either advanced countries or emerging countries. In the literature of management and business, manufacturing industries will be grown if supported by information technology in their supply chain system (Zhou and Benton, 2007). The growth of manufacturing industries also determined by competitive advantage as well as operational performance, in terms of delivery on time to customers (Barney 1991; Munizu, 2016). In addition, Porter (1990) argues that *"to achieve competitive success, firms must possess a competitive advantage in the form of either lower costs or differentiated products or services"*. Schroeder et al. (1986) stressed *"the operations strategy as part of organization strategy is implemented through the effective use of basic operations management trade-offs that support the organization's competitive strategy"*.

Related to competitive strategy, Barney (1991) argues that both organizational resources and organization capabilities as primary sources of competitive advantage. Companies would be competitive if they have organization resources that rarely and unique and it couldn't be imitated and also substituted by competitors. Then, Competitiveness related to the company's ability broadly in creating a defensive position more than its competitors. Competitiveness is consists of a set of capabilities that makes an organization different from its competitors, and also the result of important management decisions (Prahalad and Hamel, 1990).

Information sharing is one of the sources of competitiveness and an important element in supporting supply chain improvement in the organization. Information sharing related to using of information technology and sharing the information among supply chain partners in supply chain system (Zhou and Benton, 2007). Information is the most valuable resource to an organization in achieving competitive advantage. Therefore, information could be said as the source of competitive advantage.

Turban *et al.* (2001) stressed the important role of information technology in today's organization. It useful to support the major business activities and to create best products or services in the organization. The business environment has an impact on business activities. Information technology could support business activities in achieving the best performance (Rahmasari, 2011). Information technology consists of a set of hardware and software which needed to support the company's information systems. Information content as one of parts information technology refers to information that sharing between organization and customers. While, quality of information measures the quality of information that sharing between organization and customers (Turban *et al.*, 2001; Zhou and Benton, 2007). The quality of information covers three main aspects, i.e. information of environment uncertainty, intra-organizational information, and inter-organizational information. In addition, information sharing could help companies to achieve effective coordination in a supply chain system. Therefore, information sharing has to control in the supply chain system (Anatan and Ellitan, 2008).

Information sharing could improve product delivery performance (Munizu, 2016) it also could be a source of corporate competitiveness (Turban *et al.*, 2001). Then, Heizer and Render (2010) point out that delivery performance refers to on-time delivery of product and service. Therefore, delivery performance could be improved through information sharing and competitiveness. Some findings related to performance measurement was done by previous researchers. Arumugam and Mojtahedzadeh (2011) conclude that there were a positive effect SCM practices to corporate performance. Li *et al.* (2006) also find that practice of supply chain management (SCM) can enhance competitiveness, also the company's performance. Competitiveness has a direct positive influence on business performance. Han *et al.* (2007) find that efforts to obtain certification of ISO 9001 and TQM practices could improve organization competitiveness. In addition, Lakhal (2009) also find that competitiveness has a positive effect on organizational performance.

Based on some findings and literatures above, this study will analyze the effect of information sharing on competitiveness and delivery performance at manufacturing industry, in Indonesia especially in Surabaya and Makassar city.

2. LITERATURE REVIEW

2.1 Information Technology and Information Sharing

In practice, each organization needs technology information support to achieve the better competitiveness and also performance compared to competitors. The role of information technology could be found in a variety of fields within the organizational context. For example, in the production area, information sharing focuses on information flow from one work center to next work center. Information sharing consist of information content and information quality. Information content refers to content, which shared between suppliers and buyers. Whereas the quality of information focuses on quality which shared between suppliers and buyers (Zhou and Benton, 2007).

Information sharing is a very important element in the supply chain system because it could support all members in providing better product and services. The success of supply chain depended on information systems which used in their organizations (Pujawan and Mahendrawathi, 2010). The quality of information measures information that exchanged among organizations in the supply chain system to meet organization need (Petersen, 1999). Information sharing consist of three elements i.e.: information technology support, information content, and information quality (Ramdas and Spekman, 2000; Zhou and Benton, 2007; Rao *et al.*, 2011). Therefore, this study uses information technology support, information content, information quality, and information integrated as indicators of information sharing.

2.2 Competitiveness

Kuncoro (2008) asserts that competitive advantage was developed from specific activities in an organization to be more superior compared to its competitors. The word "superior" is a relative position of an organization to other organizations. Based on some studies, it could be identified that price/ cost, quality, delivery, and flexibility as the important organization capabilities. Skinner in Krajewski *et al.* (2012)

develops four priorities of competition, namely: cost/price, quality, speed of delivery and flexibility to improve performance and organizational competitiveness.

Porter (1990) argues that *“competitive advantage can be translated into higher productivity than that of competitors. The low-cost firm produces products and services using fewer inputs than competitors. The differentiated firm achieves higher revenues per unit than competitors”*. Related to above opinion, Han et al. (2007) stressed that business performance could be increased when the companies become stronger its competitiveness through some improvements at four dimensions, namely: quality, cost, delivery, and flexibility. Therefore this study uses quality, cost, delivery and flexibility as indicators of competitiveness.

2.3 Delivery Performance

According to Rao et al. (2011) concept of delivery performance could be defined as the level of products and services supplied by the organization to meet customer expectation. Delivery is one of supply chain activities in providing products and services to the customer. Heizer and Render (2010) stress that delivery performance has a positive impact on operational performance. Then, on-time delivery is an important element in operational performance.

Related to delivery performance, management must understand the important of on-time delivery of goods and services to customers, because it can increase organizational performance. Delivery performance is a key performance measurement criteria in supply chain management (Zhou and Benton, 2007; Chopra and Meindl, 2007). Effective delivery performance has a significant impact on supply chain performance (Supply Chain Council, 2002). Indicators of delivery performance consists of on-time delivery, order fulfillment rate, delivery reliability, and delivery dependability (Zhou and Benton, 2007). Furthermore, Coyle *et al.* (2003) states three delivery dimensions namely delivery speed, production lead-time, and delivery reliability. Therefore, this study uses four indicators to measure variable of delivery performance namely, on-time delivery, order fulfillment rate, delivery reliability, and delivery speed.

3. RESEARCH METHODOLOGY

This study used quantitative approach in solving research problem. The unit of analysis for this study was the manufacturing organizations in Indonesia. Number of sample was 90 companies which consisted of 50 companies from Makassar City, and 40 companies from Surabaya city. Thus, description of sample characteristic can be presented in the following table.

TABLE 1. CHARACTERISTICS OF SAMPLE

| No. | Types of Industry | Location | | | |
|-----|--------------------|--------------------|-------------------|--------------------|-------------------|
| | | Surabaya (unit) | Percentage (%) | Makassar (unit) | Percentage (%) |
| 1. | Food and Beverage | 16 | 32.00 | 13 | 32.50 |
| 2. | Metal Basic | 8 | 16.00 | 11 | 27.50 |
| 3. | Shrimp and fishery | 14 | 28.00 | 8 | 20.00 |
| 4. | Furniture | 8 | 16.00 | 6 | 15.00 |
| 5. | Others: | 4 | 8.00 | 2 | 5.00 |
| | Total | 50 | 100.00 | 40 | 100.00 |

Sources: Primary data, processed (2016)

As shown in Table 1, there were three industries which dominant than others, namely food and beverage industry (29 units), shrimp and fishery industry (22 units), and metal basic industry (19 units). Moreover, most of respondents in this study were production managers or operation managers. Furthermore, this study used both primary data and secondary data. The research variables includes information sharing (X), competitiveness (Y₁), and delivery performance (Y₂). Then, variables and indicators measured by

using Likert Scale 1 to 5. Value of 5 representing a very high frequency of practice, and value of 1 representing a very low frequency of practice (Hair et al., 2010; Solimun, 2011)

Questionnaire was used to collect field data. Questionnaire must be valid and also be reliable before field data collection. Test of validity used Pearson correlation coefficient, whereas reliability test performed by using Cronbach's α measurements. Indicators can be valid if value of correlation coefficient was more than 0.30. In addition, variables also can be reliable if value of Cronbach's α was more than 0.60 (Hair et al., 2010). This study used both descriptive statistics and Partial Least Square (PLS) as method of analysis. Then, data calculated by using SmartPLS 2.0 Software.

4. RESULTS AND DISCUSSION

Descriptive analysis conducted for describes the average value of each variable in implementation context. The results of descriptive analysis are presented in the following table.

TABLE 2. MEAN VALUE OF VARIABLES

| No. | Name of Variables | Mean | Description |
|-----|----------------------------------------|------|-------------|
| 1. | Information sharing (X) | 3.37 | Good Enough |
| 2. | Competitiveness (Y ₁) | 3.91 | Good |
| 3. | Delivery performance (Y ₂) | 4.05 | Good |

Sources: Primary data, processed (2016)

Table 2 shows that mean value of information sharing variable was 3.37 (good enough category). Whereas variable of competitiveness was in good category with mean value of 3.91. It was followed by delivery performance (mean value = 4.05). These results indicate that information sharing in terms of information technology support, information content, information quality, and integrated information wasn't optimal yet in implementation context. The same condition also occurs at variables of competitiveness and delivery performance.

Structural Equation Modeling (SEM-PLS) was employed to test the hypotheses. It is a useful technique that can be used to analyze the relationship among variables in the complex model. Then, data analyzed by using Smart PLS 2.0. In The SEM-PLS analysis, a model must meet criteria "goodness of fit". A model can be said "fit" when it supported by empirical data. It can be known from relevance predictive value (Q^2). The relevance predictive value (Q^2) obtained by the following formula:

$$Q^2 = 1 - (1 - R_1^2)(1 - R_2^2)$$

$$Q^2 = 1 - (1 - 0.185)(1 - 0.436)$$

$$Q^2 = 0.540 \text{ or } 54\%$$

Results of calculating shows that value of predictive relevance (Q^2) was 0.540. This means that empirical model can explain the variation of delivery performance variable of 54%. Based on the result of Q^2 value, it can be inferred that model has a good predictive value. Therefore, this model can be used to test research hypothesis. Figure 1 displays the results of the empirical model of the study.

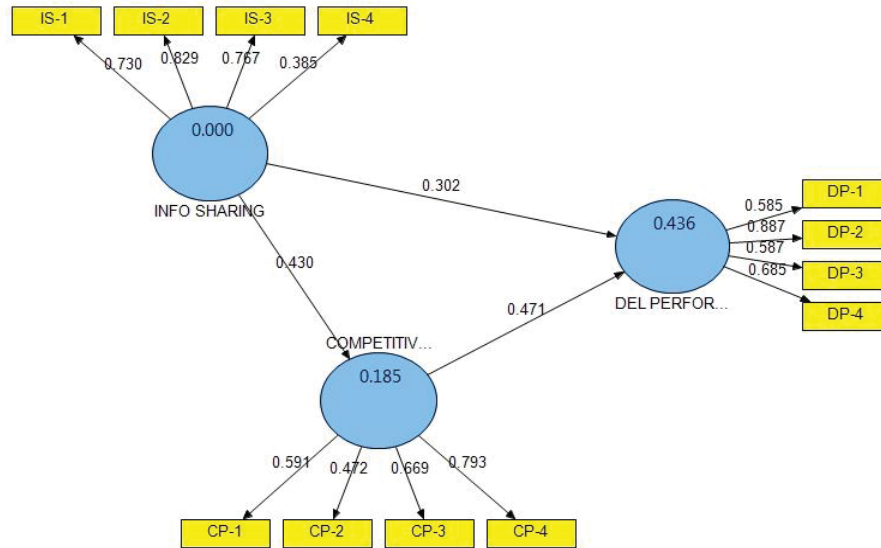


FIGURE 1. RESULT OF EMPIRICAL MODEL

As can be seen in figure 1, the relationship among variables in the model. First relationship was the effect information sharing on competitiveness. The effect information sharing on delivery performance as second relationship, and third relationship was the effect competitiveness on delivery performance. The figure also describes the loading factor of each indicator which forming each main variable in the model. Then, results of hypothesis test can be presented in the following table.

TABLE 3. RESULTS OF HYPOTHESIS TEST

| Hypotheses | Exogenous Variable | Endogenous Variable | Path Coefficient | T-Statistic | Description |
|------------|---------------------|----------------------|------------------|-------------|---------------------------|
| I | Information sharing | Competitiveness | 0.430 | 6.192 | H ₁ (accepted) |
| II | Information sharing | Delivery performance | 0.302 | 5.350 | H ₂ (accepted) |
| III | Competitiveness | Delivery performance | 0.471 | 6.390 | H ₃ (accepted) |

Sources: Primary data, processed (2016)

Based on table 3, it concluded that three hypotheses proposed in this study were supported by empirical facts. First, information sharing has a positive and significant effect on competitiveness (H₁, supported by empirical data). Second, information sharing has a positive and significant effect on delivery performance (H₂, supported by empirical data). Third, competitiveness has a positive and significant effect on delivery performance (H₃, supported by empirical data). In addition, the results of this research indicate that delivery performance more influenced by competitiveness compared by information sharing. Testing of hypotheses conducted at level of significant ($\alpha = 0.05$).

Therefore, the first priority in increasing the delivery performance was improvement of information sharing elements such as providing access information widely for all members in supply chain system through use of electronic data interchange (EDI) to all partners. The second priority was improvement of competitiveness indicators such as providing higher quality product and services to customers greater than competitors.

These findings were in line with Munizu (2016) who found that information sharing has a positive effect toward delivery performance, especially in term of on-time delivery product and services to customers.

Then, this study supports Arumugam and Mojtahedzadeh (2011) that there was a positive influence between SCM practices and corporate performance. The results of this study were consistent with some previous studies which found that variable of competitiveness has a positive influence on business performance (Li *et al.*, 2006; Han *et al.*, 2007; and Lakhal, 2009). Related to use of information technology, the results of this study also supported Rahmasari (2011) that information technology could supported business activities in an organization to generate best performance.

Furthermore, the results of this study are consistent with Porter (1990) that stressed the important of competitiveness to an organization. Porter asserts that *"In the long run, firm succeed relative to their competitors if they have sustainability competitive advantage. There are two basic types of competitive advantage, namely lower cost and differentiation. Lower cost is the ability of a firm to design, produce, and market a comparable product more efficiently than its competitors. While differentiation is the ability to provide unique and superior value to the buyer in terms of product quality, special features, or after sales service"*.

Most of competitiveness and organization performance can be achieved by companies if they have a set of abilities to provide and to produce goods as well as services which has some criteria includes a high quality standard of product, competitive prices, flexibility and speed of delivery. As a result, products and services can compete in terms of quality, price, delivery of the product, and flexibility more than competitors in the global market (Prahalad and Hamel, 1990; Heizer and Render, 2010; Krajewski *et al.*, 2012).

5. CONCLUSIONS

In conclusion, this study has examined the relationship between the information sharing, competitiveness and delivery performance. The level of information sharing (information technology support, information content, information quality, and information integrated) was found to affect competitiveness. Then, the level of information sharing (information technology support, information content, information quality, and information integrated) was found to affect delivery performance. In addition, the level of competitiveness (quality, cost, delivery, and flexibility) was found to affect delivery performance. The results of this study also indicate that delivery performance more influenced by competitiveness than information sharing.

This study gives some implications to managers. Managers must have a good understanding to fix the elements of information sharing and competitiveness. As a result, it can help managers to take some corrective actions in increasing the quality of information sharing and also organization competitiveness. For improving quality of information sharing purpose, managers can provide full access information to all supply chain members such as inventory reports and product price reports. Then, managers also must improve the elements of competitiveness such as providing low price, high quality, high flexibility, and high speed in delivery of goods and services to customers. Furthermore, from the theoretical perspective, the findings of the study support the competitiveness model derived from strategic and operation management theories.

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THE EFFECTS OF MONETARY INCENTIVES ON EFFORT AND DECISION PERFORMANCE: THE ROLE OF COGNITIVE CHARACTERISTICS

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ABSTRACT

We examine the relation between monetary rewards, cognitive capabilities, dimensions of effort and how they affect decision-making in complex contexts. Using an experiment, we extend previous research with other effort areas. We find that the effect of incentives depends on the cognitive capabilities, type of tasks, and educational background. In contrast to the literature in behavioral studies, we find that monetary incentives do not affect individuals with highly developed abilities in perceptual differentiation to increase the duration of their tasks. Instead, our study proposes that this type of subjects induce their efforts to disentangle key information in a shorter period of time.

Keywords: cognition, perceptual differentiation decision rules, experiment, incentives, judgment, context.

1. INTRODUCTION

The roles of incentives and extrinsic rewards have received considerable attention in research and academic writing (Chen, Williamson, & Zhou 2012; Fisher, Pfeffer, & Sprinkle 2003; Presslee, Vance, & Webb 2013). Researches assume that monetary gains boost effort and the lack of such might have mixed results (Bonner, Hastie, Sprinkle, & Young 2000; Borisov, & Lueg 2016). Financial incentives affect performance where increased effort is a direct answer to the economic stimulus (Camerer, & Hogarth 1999). A large number of researchers have studied monetary incentives and their effects on performance and effort. In a review of 74 experiments, Camerer and Hogarth (1999) find that the results and effects of financial stimulation vary across settings. Kachelmeier et al. (2008) report from experiments that financial incentives induce higher performance, effort, and creativity. In other decision contexts, however, monetary rewards can adversely affect performance. According to Stone and Ziebart (1995), subjects may pay more attention to their self-evaluation than to their performance, thus downgrading the quality of their decision-making. Bonner and Sprinkle (2002) recognize that financial incentives have no effect on performance unless subjects possess the necessary skills. Hence, the impact of monetary incentives cannot be generalized. Instead, subjects and incentive systems depend on underlying structures and patterns that form decision performance, for example, individual skills and task characteristics.

However, in an attempt to understand these relationships, Bonner et al. (2000) propose a conceptual framework for the effect of incentives. The authors suggest that the monetary incentives are a direct motivational factor for increased efforts. The combination of effort factors, such as direction, duration, intensity and strategy development, affect the quality of task performance. Bonner et al. (2000) indicate that there is a need for more research in understanding the link between financial incentives and task performance. Similarly, Sprinkle (2000) proposes that individuals' performance of complex tasks is related to their understanding of the procedure to perform. The studies suggest that understanding how is crucial for improving decision-making. In this vein, we extend Awasthi and Pratt's (1990) research design by additional measurement of effort, i.e., strategy development, in an attempt to better understand how subjects make decisions in the presence of incentives in a complex environment.

In our experiment, subjects were tested in their comprehension and ability to apply three decision rules (conjunction probability, sample size, and sunk cost). The effort and decision performance were tested in three accounting decision-making contexts (auditing receivables, evaluating internal control, and whether to continue an investment in a tangible asset).

Our results contribute to the contemporary accounting literature in several ways. Firstly, this study extends and combines understandings about perceptual abilities (e.g., Zhang 2004) and accounting knowledge (e.g., Bonner, & Sprinkle 2002) by adding explanations about intuition and training. The number of statistical and accounting courses appears to have helped subjects overcome perceptual biases. Secondly, we add a different understanding of effort duration. Contrary to traditional theory in the experimental literature (e.g., Dobbs, & Miller 2009; Samuels, & Whitecotton 2010), we find that subjects with high levels of perceptual differentiation employ their ability to quickly find particular objects within a complex context. They need less time to solve complex cases. Thirdly, this paper extends the work of Awasthi and Pratt (1990) by showing significant differences in strategy levels between rewarded and non-rewarded groups. Desiring to perform better, certain individuals reported higher levels of their approach to the experimental questions. Fourthly, our study finds that, when controlling for incentive groups, subjects with high and low levels of perceptual abilities differ in their number of correct answers. Specifically, the sample size and sunk cost comprehension questions show statistical differences. This result contributes to a broad field of incentive studies which have found a positive influence of financial rewards (e.g., Casas-Arce, & Martinez-Jerez 2009; Hannan, Krishnan, & Newman 2008; Newman, & Tafkov 2014; Rankin, & Sayre 2011).

The remainder of our paper is structured as follows. Section 2 elaborates on fundamental concepts used in the study and our hypotheses. Section 3 explains the experimental method and the operational measures utilized. Section 4 presents the results of the hypothesis tests. Section 5 discusses the implications and limitations of this paper.

2. BACKGROUND AND HYPOTHESES DEVELOPMENT

We develop our hypotheses in three stages. The first stage looks at the relation between perceptual differentiation and positively related performance. In the second stage, the hypotheses posit that incentives cause subjects to make an additional effort (i.e., use more time to answer the question). We also address the extension made by adding measurement of strategy development. In the third stage, we look at the relation between incentives and perceptual differentiation in applying and comprehending the decision rules.

2.1 Context, perceptual differentiation, and accounting decisions

Studies indicate that context might have an effect on the decision-making. The implications, mechanisms, and types of contexts differ according to the setup of a study. For example, in an experimental study, Mohd-Sanusi and Mohd-Iskandar (2007) test audit judgment in a complex context. In case-based tasks, they find that complexity induces a higher effort level that improves decision-making. In other auditing settings, Hoffmann et al. (2003) perform an experiment where experienced and inexperienced auditors were tested in processing information. Information was given in cues, where each subject, based on context and knowledge, had to make a going-concern judgment. Findings show that the task context and the subject's ability to adapt to a constrained environment affect auditors' decisions. The assimilation of information by the use of context is linked to auditors' cognitive characteristics. Various works research the interaction between context and cognitive capabilities (e.g., Burkert, & Lueg 2013; Butler, & Ghosh 2014; Rydval 2007; Witkin, Oltman, Raskin, & Karp 1971). Perceptual differentiation refers to a subject's ability to recognize objects, figures, patterns from a complex embedded context (Witkin, Oltman, Raskin, & Karp 1971). Witkin et al. (1971) researched the testing of preceptors' ability to recognize underlying figures embedded in a bigger picture or context (other current studies on this topic are Xie 2015; Zhang 2004; Zhang, & Sternberg 2005). Even though an embedded figures test (EFT) reflect 'only' an individual's competence in deconstructing perceptual embedding, studies show that embedded figures test results hint at problem-solving abilities (Evans, Richardson, & Waring 2013, p. 211). A number of studies investigate the implications of embedded figures test scores. Researchers such as Zhang (2004), Zhang and Sternberg (2005), DeBell and Crystal (2005) and Xie (2015) indicate that field independence is related to problem-solving and computer programming abilities, while field dependence links to styles dealing with lower levels of complexity.

In an accounting context, simple decisions are often made in complex settings (Borisov, & Lueg 2012; Janiak, & Lueg 2016; Lueg, & Borisov 2014). Subjects need to apply decision rules, such as conjunction probability, the role of sample size, and the irrelevance of sunk cost. Researchers in the field of probability investigate how subjects make decisions in uncertain events (e.g., Milkman, Chugh, & Bazerman 2009; Stanovich, & West 2008). The likelihood of the uncertain events A and B cannot exceed the probability of the individual probability either A or B (Kahneman, & Tversky 1982). A number of studies discuss and research the role of sample size (Evans 2006; Kahneman, & Frederick 2002; Kahneman, & Tversky 1982). One of the main implications of sample size is representativeness. According to Kahneman and Tversky (1982), subjects refer to the population based on their understanding of the sample. For example, if in a sample the occurrence of event A outnumbers the occurrence of event B, people tend to make generalizations based on the representativeness of this sample. The sunk cost phenomenon states that people increase or continue to invest in an activity only if they were previously involved with it (Arkes, & Blumer 1985; de Bruin, & Parker 2007). Investment refers to financial investment, but also to investment in time and effort. Arkes and Ayton' (1999) research shows that subjects often cannot distinguish the prior losses from the current decision. By the use of Tversky and Kahneman's lost ticket scenarios, Arkes and Ayton (1999) reveal that changing the wording in a sunk cost problem causes participants' perception to change. In cases where individuals are able to segregate the incremental cost, they disregard the sunk costs.

This study replicates and extends the work of Awasthi and Pratt (1990). The extension of this study is based on the suggestions of Bonner and Sprinkle (2002), Bonner (2000) and Sprinkle (2000) for further investigation of the how-aspect of the effect of monetary incentives. Specifically, Bonner (2000) states that subjects differ in their level of skills and the way they solve problems. The author specifically problematizes that Awasthi and Pratt (1990) do not address measurements of strategy development. In order to address this criticism, we employ an additional question to measure the levels of strategy development among subjects.

Apart from this extension, we consider the suggestion of Awasthi and Pratt (1990) that professional investors, managers, and creditors have failed to apply decision rules in a real-life context. Therefore, our experimental setting requires experimental subjects to (1) use the conjunction probability rule to assess a past due account receivable, (2) understand the role of sample size in an evaluation of internal control, and (3) ignore a sunk cost while deciding whether to continue an investment in a tangible asset. Subjects' reply to the experimental question is likely to be a reflection of their ability to disentangle simple decisions within a complex context (high or low *perceptual differentiation*). We hypothesize:

H1: In accounting-based cases, individuals with high perceptual abilities will perform better at applying familiar decision rules compared to those with low levels of perceptual differentiation.

2.2 The effects of monetary incentives

The agency perspective of work effort suggests that individuals increase their productivity anticipating monetary rewards. Individuals are seen as work and risk-averse with respect to income. Failure to achieve a higher outcome relates to the risk of not getting the promised monetary reward. Success, however, is seen as a result of extended work effort that maximizes a subject's utility. In both cases, it is assumed that the agent is fully rational. The principal offers the agent an incentive-based contract (cf. Brown, Evans, & Moser 2009; Kunz, & Pfaff 2002; Young, Beckman, & Baker 2012). Increases in performance can be observed in both accounting and non-accounting contexts (e.g., Cadsby, Song, & Tapon 2007; Chambers, & Quiggin 2005). In an accounting context, individuals often have to make decisions in complex situations. Depending on the level of complexity, accountants employ their cognitive abilities and induce their efforts to make a correct decision (Tan, & Kao 1999). Under contingency rewards, Sprinkle (2000) suggests that time spent on a task is related to the level of effort. Subjects who are determined to perform better in taking the correct decision, increase their effort, and spend more time on the task. Individuals can express their determination in performing better at tasks in other terms. According to Locke and Latham (1990), monetary rewards can stimulate subjects to acquire the skills needed to solve a task. This means that subjects can take on the problem-solving task by employing a kind of *strategy*. For instance, this might be an application of existing templates, or the way individuals

check their answers. Based on the discussion above, two things can be considered: induced effort expressed in time spent, and strategy development. We propose:

H2: Individuals who manage to earn monetary rewards, will spend longer time compared to the rest of the subjects.

H3: Individuals who manage to earn monetary rewards, will have higher levels of strategy development compared to the rest of the subjects.

Even though it appears intuitive that monetary incentives induce performance-inducing effort, the relation between these factors is not that clear-cut. According to Bonner (1999), several variables affect subject performance in experimental studies. Person variables relate to individual characteristics, such as knowledge and skills. Task variables are linked to factors such as complexity, framing, and effort sensitivity. Environmental variables are a set of conditions, circumstances, and influences that affect subjects' decision-making process. An example could be feedback or allowance for information search during an experiment. In such cases, individuals can use their personal qualities, e.g., perceptual differentiation, to increase their effort and achieve higher performance.

In a continuous study of twelve trials, Sprinkle (2000) observes a positive relation between incentives/effort and performance. Sprinkle (2000) asked experimental subjects to earn profit-based points by choosing a production quantity strategy. In order to understand which type of the incentive contract is better, the experiment offered flat-wage incentives to one group and performance-based rewards to the other. The performance-based participants could gain cash by solving more tasks correctly. The other type of individuals was given a 40-point reward regardless of their performance. These points could later be used to convert them into cash. Since one of the goals of this study was to measure learning, participants were given the opportunity to receive feedback on each trial (each trial contained five problems). The findings suggest that (1) feedback increased the number of each participant's correct answers after approximately four trials, and (2) the type of the incentive contract affected individuals' effort. The positive relation between feedback and increased performance could also be related to the individual's cognitive characteristics, i.e., the ability to learn from mistakes, or to assimilate essential facts from the complex context.

Contrary to Sprinkle's (2000) positive relation, other papers find a downgrading effect of incentives. These studies include cases where the relation between incentives and performance is affected by underlying structures. The mere increase of cognitive effort does not induce higher rates of effectiveness. Fessler (2003) found that the type of incentive system (fixed or performance-based) affects performance means in relation to how attractive the job is. The fixed-wage outperforms the performance-based reward when the task is attractive. Wynder (2010) concluded that the lack of instruction in combination with performance-based incentive rewards does not improve the performance of subjects. Drake et al. (2007) relate competence with the type of incentive system. They find a negative relationship between the two factors. Bonner (2002, p. 313) states that:

"Specifically, individuals may try harder in the presence of incentives (e.g. exhibit higher effort intensity or greater effort duration) but, if they lack the skill needed for a given task, their performance will be invariant to increases in effort."

The discussions above suggest that the absence or the inappropriate skills seem to increase the level of effort but do not lead to significant performance improvements. Instead of lacking knowledge, subjects might be missing statistical or perceptual qualities in solving tasks. In relation to the perceptual differentiation characteristics and type of the incentive system, the following hypotheses can be stated:

H4: In a performance-based reward system, individuals with high perceptual abilities will have higher levels of correct answers across the comprehension and application decision rules compared to the ones with low level of perceptual differentiation

3. EXPERIMENTAL METHOD

This experiment strictly separates comprehension and application of test subjects, since Kahneman and Tversky (1982, p. 125) suggest that: "A failure in a particular problem is called an error of application if there is evidence that people know and accept a rule that they did not apply. A failure is called an error of comprehension if people do not recognize the validity of the rule that they violated." The distinction between comprehension and application allows us to investigate in depth the effect of incentives, and how individuals use their abilities in complex settings. The structure of the experiment allows controlling for participants' knowledge and understanding about the three decision rules.

3.1. *Performance-contingent system*

Unlike Awasthi and Pratt (1990), we do not entail a flat reward and performance-based incentives for half of the participants, but distribute the monetary rewards based on a shared rewarding system. According to Rack et al. (2011), two types of incentive systems can be distinguished, one based on equality and the other on equity. Equality distribution means that incentives are distributed on an equal basis no matter the performance of individuals in a team. Equity sharing means that the performance of individuals determines their monetary reward: The higher the performance of subjects, the greater the gain from the total pool. Sinclair (2003) finds that stimulation based on individual performance increases overall performance. Ghosh (1997) indicates that in laboratory experiments the performance-contingent system is the preferred way of distributing rewards. Since we are interested in measuring performance based on incentives and individual performance in a laboratory experiment, a shared rewarding system is employed. A contingent rewarding system allows this study to motivate participants to optimize their efforts as regards time and strategy development.

3.2. *Participants*

Fifteen participants took part in the experiment (female $n = 8$, male $n = 7$). The mean age of the participants was 25 years, and all of them were university students at a large European university. We ensured that participants had received the necessary training for this experiment by demanding a minimum of 5 ECTS in accounting and statistics.

3.3. *The experiment*

We conducted pre-tests of our experiment questions. Firstly, the experimental questions were peer-assessed and following the reviewer's comments, the questions were rewritten and matched to the research design of Awasthi and Pratt (1990). Secondly, all questions were adapted from reputable articles and authors. When making the initial contact with participants, we informed them about the opportunity to win monetary rewards. None of the participants received information about what their possible compensation could be. Before starting the experiment, we informed participants that scoring above the median resulted in monetary rewards. Individuals had the chance to ask clarifying questions. We now explicate the parts of the experiment:

Part 1: The embedded figures test measured the perceptual differentiation level (Witkin, Oltman, Raskin, & Karp 1971). This part consisted of 18 different questions to be answered within 20 minutes. From a pool of 50 questions, 18 were chosen at random and presented in print.

Part 2: This part tested participants' comprehension of the three decision rules: conjunction probability, sample size, and sunk cost decision rule. As this part was targeted at measuring participants' comprehension of the rules, the questions were kept short and as context-free as possible. On average, the subjects needed approximately three minutes to complete this part.

Part 3: Participants' ability to apply the three decision rules: conjunction probability, sample size and sunk cost decision rules measure application abilities. Firstly, the conjunction probability problem was adapted from Kahneman and Tversky (1982, p. 126) in a case format. Secondly, the sample size problem was similar to the one found in Kahneman and Tversky (1972, p. 443). A case asked participants to evaluate where the external risk (a component of the internal control) exceeded 60 per cent. Thirdly, the sunk cost decision was similar to the one made by Arkes and Blumer (1985, p. 129) where participants were asked

to evaluate if they should continue investing in a car project. On average, participants needed seven minutes to complete this part.

Part 4: This part is positioned at the end of the experiment in order to get background information, feedback information, and to measure the participants' use of strategy development. The background information included questions about grade point average, number of statistics and accounting courses, age and gender. The feedback information included questions about the difficulty of the experiment and, in general, how interesting it was. The strategy development issue included a Likert-scaled question about the level of implementation of the strategy in solving the questions (cf. Wright 1990, p. 248). Respondents viewed the experiment as interesting, marked 4 out of 5. The experimental questions were considered as moderately difficult with a mark 3.64 out of 5. The moderate difficulty of this experiment was also reflected in participants' confidence in scoring correctly. Participants viewed their correctness as 2.64 out of 5 (5 the highest).

3.4. High and low performers: measuring procedure

Based on the EFT scores (scores from 0 through 18 points), subjects were divided into two groups: high and low. The division of low and high performance created the dependent variable that we use for testing H1 and H4. The measurement method is based on the median. A recent study by Butler and Ghosh (2014) achieved satisfying results by using this approach. In this experiment, the median for high performance was 11.

In the statistical analyses, we analyzed part 2 as comprehension questions and part 3 as application questions. For part 2, each correct answer was counted as 2 points, while in part 3 each correct answer was given 3 points. Each person was an individual case.

4. RESULTS AND DISCUSSION

4.1. H1: Application of decision rules in the High and Low groups

We use the Mann-Whitney U test to analyze H1. Studies in the statistical field show that both paired t-test and Mann-Whitney U test could be employed in conditions of small samples (e.g., Divine, Norton, & Dienemann 2013). The assumptions of normal distribution and outliers weight the choice between the two statistical tests. The selection between the t-test or the Mann-Whitney U test uses the tests for normality and outliers. Normality is insignificant using Shapiro-Wilk's test of normality. None of the cases show signs of outliers. This means that the Mann-Whitney U test is a better option for testing H1.

We used the performance in the embedded figures test to form seven pairs (i.e. high vs. low performers). Each had different positive or negative ranks, or in case of a match, a *tie* was established (Table 1). A tie indicates that there is no difference between low and high. In conjunction probability there are four ties, while in sample size there are five ties. The number of ties in sunk cost is four. Regardless of these results, the p-value is insignificant in any pair (Table 2). It means that H1 cannot be accepted. When not controlling for incentives, the level of perceptual differentiation does not affect the application of decision rules in cases with accounting context.

Table 1: Application

| Perceptual differentiation | Decision rules ^a | | |
|----------------------------------|----------------------------------------------------|----------------------------------------|--------------------------------------|
| | Conjunction probability (high vs low) ^c | Sample size (high vs low) ^c | Sunk cost (high vs low) ^c |
| Negative low > high ^b | 1 | 1 | 1 |
| Positive high > low ^b | 2 | 1 | 2 |
| Ties ^b | 4 | 5 | 4 |
| Significance | 0.564 | 0.655 | 0.564 |

^aThis table measures the application performance of the high and low performers in the three decision rules. The data are taken from part 3 of the experiment where complex cases measured decision performance.

^bThe negative pair is for the low performer to overcome the higher performer. The positive pair is for high performer to overcome low performer. The tie indicates an equal match.

^bThe pairs include the following variables:

^cHigh_PD_conj_3 - High PD in conjunction probability part 3

^cLow_PD_part_3 - Low PD in conjunction probability part 3

^cHigh_sample_3 - High PD in sample size part 3

^cLow_sample_3 - Low PD in sample size part 3

^cHigh_sunk_3 - High PD in sunk cost part 3

^cLow_sunk_3 - Low PD in sunk cost part 3

In an attempt to explain the insignificant statistical results, we perform a bivariate correlation test between the number of statistical courses, GPA and perceptual differentiation. GPA correlates with both the application conjunction probability in low perceptual differentiation and the application of the sunk cost decision rule in highly perceptual individuals. There is a correlation between the number of statistical courses and the application of sunk cost application rules in low levels of perceptual capabilities. This positive statistical correlation indicates that the higher the numbers of courses in statistics, the better individuals with low perceptual differentiation abilities are at applying the sunk cost decision rule. The number of courses in statistics (mean = 3) developed statistical intuition/thinking. Thus regardless of individuals' perceptual differentiation level, they are able to cope with the application of the sunk cost decision rule. This finding is in line with other studies; Hodgkinson et al. (2008) and Nofle and Robins (2007) indicate that intuition can be developed by learning and training. Hodgkinson et al. (2008) note that intuitive ability helps to identify contextual cues during decision-making. Further, Zhang (2004) suggests that perceptual differentiation is related only to the ability to visually disembed objects within the bigger environment and cannot be linked to intellectual/thinking styles. Dobbs and Miller (2009) and Nofle and Robins (2007) indicate that higher GPA relates to better problem-solving abilities. Perhaps, in coping with the complex cases in part 3, participants have employed their problem-solving abilities obtained through previous education. We note that the explanation of why there are no differences between the high and low individuals in perceptual differentiation is supported only in the sunk cost decision rule.

To further analyze the problem of application, we use a Mann-Whitney U test for testing the comprehension of the three decision rules between the high and low groups. Even though there is no statistical significance between high and low individuals in comprehension questions (Table 2), the two groups have the same types of pairs in both *comprehension* and *application* of decision rules (see Table 1 and Table 2). This implies that subjects who comprehend the decision rule, are also able to apply it. In case a subject can apply a rule without understanding it, the number of courses has helped that person to solve the task.

Table 2: Correlations of applications

| | Correlation ^a | Significance |
|--------------------------------------------------------------------|--------------------------|--------------|
| GPA ^b - low PDs in conjunction probability ^d | 0.900 | 0.005 |
| GPA ^b - high PDs in sunk cost ^e | 0.826 | 0.043 |
| Statistics ^c - low PDs in sunk cost ^f | 0.883 | 0.020 |

^aThis table shows the correlation in application of the decision rules

^bGPA variable

^cNumber of statistics courses

^dLowPD_conj_part3 - the answers of low PDs in the conjunction probability

^eHighPD_sunk_part3 - the answers of high PDs in the sunk cost

^fLowPD_sunk_part3 - the answer of low PDs in the sunk cost

**Table 3:
Comprehension**

| Perceptual differentiation | Decision rules ^a | | |
|----------------------------------|----------------------------------------------------|----------------------------------------|--------------------------------------|
| | Conjunction probability (high vs low) ^c | Sample size (high vs low) ^c | Sunk cost (high vs low) ^c |
| Negative low > high ^b | 1 | 0 | 2 |
| Positive high > low ^b | 3 | 2 | 2 |
| Ties | 3 | 5 | 3 |
| Significance | 0.317 | 0.655 | 0.564 |

^aThis table measures the application performance of the high and low performers in the three decision rules. The data are taken from part 2 of the experiment.

^bThe negative pair is for low performer to overcome higher performer. The positive pair is for high performer to overcome low performer.

^bThe pairs include the following variables:

^cHigh PD_conj_2 - High PD matches in conjunction probability part 2

^cLow_PD_part_2 - Low PD in conjunction probability part 2

^cHigh_sample_2 - High PD in sample size part 2

^cLow_sample_2 - Low PD in sample size part 2

^cHigh_sunk_2 - High PD in sunk cost part 2

^cLow_sunk_2 - Low PD in sunk cost part 2

We performed a correlation analysis to investigate the link between GPA and comprehension decision rules. There is a high correlation between the comprehension of sunk cost decision rule and the GPA in a group of individuals with a low level of perceptual differentiation. It implies that—regardless the categorizations of the embedded figures test—subjects appeared to have mobilized their university education for answering the comprehension questions. Higher GPA suggests that individuals have comprehended the study material better: Both subjects with low and high perceptual differentiation performed equally well. These findings are supported by other studies with similar results (e.g., Kuncel, Hezlett, & Ones 2004; Noffle, & Robins 2007).

Table 4: Correlation of comprehension

| | Correlation ^a | Significance |
|------------------------------------------------------|--------------------------|--------------|
| GPA ^b - Low PDs in sunk cost ^c | 0.826 | 0.043 |

^aThis table shows the correlation between GPA and low PDs in comprehension sunk cost question
^bVariable GPA
^cLowPD_sunk_part2 - the answers from low PDs in sunk cost

Regardless of the overall rejection of H1, the level of perceptual differentiation was not an obstacle to applying the decision rule. The higher the levels of GPA, the better participants answered the comprehension questions on sunk costs. Likewise, subjects with more statistical courses could use their knowledge in applying the sunk cost decision rule.

4.2. H2: The effect of monetary incentives on time used

To analyze H2, we use a paired t-test to uncover the differences between the participants who managed to get a monetary reward and those who stayed below the median. Two variables form the test: subjects with rewards and subjects with no rewards from part 3.

Table 5 shows that H2 is not supported by the statistical test. Even though it is significant with p-value = 0.034, it contradicts theory (e.g., Bonner, Hastie, Sprinkle, & Young 2000; Dobbs, & Miller 2009; Samuels, & Whitemcotton 2010; Sprinkle 2000). Instead of using more time to think about the questions, subjects with monetary rewards were actually *quicker* in solving part 3 (mean time 472 seconds vs. 376 seconds for not rewarded individuals). Perhaps rewarded participants were motivated to answer more quickly than the rest. Alternatively, their speed reflects their level of perceptual differentiation. In the group of rewarded subjects, four out of six participants possess high perceptual abilities. In order to further investigate how participants managed to give swifter answers, we ran an ANOVA.

Table 5: Paired sample T-test

| Paired t-test ^a | Mean | df | Significance |
|---------------------------------------------|---------------|----|--------------------|
| Rewarded group vs not rewarded ^b | 376 vs 471.67 | 5 | 0.034 ^c |

^aThe table above shows the output for measuring hypothesis 2. It creates a pair for the time used between both groups: rewarded and not rewarded.

^bRewarded_group_time_used - the time used by participants who managed to get monetary rewards in part 3 of the experiment.

^cNot_rewarded_group_time_used - the time used by participants who did not managed to get monetary rewards in part 3 of the experiment

^cThe test rejects the null hypothesis where significance is 0.034

The ANOVA model consists of the level of perceptual differentiation (PD_level) as independent variable, and the time needed to master part 3 (application questions). This combination of variables shows how individuals with high and low perceptual differentiation used their time to answer the questions. The model is as follows:

$$Part3_{ij} = \mu + PD_level + \epsilon_{ij}$$

As seen in Table 6, the PD_level is associated with a p-value of 0.056. Given our small sample size, we consider this very closely significant (we address this issue in the discussion section). The ANOVA test shows that there are differences between the high and low performers and the time they used. Individuals with high perceptual differentiation needed less time to complete the part 3 application questions. The

findings from the first part of this hypothesis contradict what experimental theory suggests (e.g., Bonner, Hastie, Sprinkle, & Young 2000; Dobbs, & Miller 2009; Samuels, & Whitecotton 2010; Sprinkle 2000), and to what Awasthi and Pratt (1990) find. The ANOVA findings on perceptual differentiation levels are in line with a number of studies suggesting that a high level of perceptual differentiation is better at disembedding essential elements in a complex context (Evans, Richardson, & Waring 2013; Zhang 2004; Zhang, & Sternberg 2005).

Table 6: ANOVA

| Tests of Between-subjects Effects (ANOVA) ^a | | | | | | |
|--------------------------------------------------------|-------------------------|----|-------------|---------|-------------------|--|
| Dependent Variable: Part_3 ^c | | | | | | |
| Source | Type III sum of Squares | df | Mean square | F | Sig. ^b | |
| Corrected Model | 29476.876a | 1 | 29476.876 | 4.404 | .056 | |
| Intercept | 2715497.143 | 1 | 2715497.143 | 405.713 | .000 | |
| PD_level ^d | 29476.876 | 1 | 29476.876 | 4.404 | .056 | |
| Error | 87010.857 | 13 | 6693.143 | | | |
| Total | 2806348.000 | 15 | | | | |
| Corrected Total | 116487.733 | 14 | | | | |

^aThis table contains information about the ANOVA test performed. The ANOVA table shows the differences in groups. This suggest that according to the PD level, there will be differences in time. High PDs show lower time periods, where low PDs show longer time periods.

^bTwo-tailed significance is used in this test.

^cdependent variable part_3 - the time in part 3

^dindependent variable PD_level - the state of being either low or high PD

4.3. H3: The effect of monetary incentives on strategy development

To test hypothesis 3, we use a Mann-Whitney U test. Subjects who managed to score enough for a monetary reward and the rest of the participants are compared. From Table 8, it can be seen that the coefficient is in the right direction, and the significance level is p-value = 0.030. This lets us reject the null hypothesis and confirm the strategy differences between rewarded and not rewarded participants. Further, the number of positively affected individuals with higher strategy development is four pairs (Rewarded_strategy > Not_rewarded_strategy). The negative ranks are 0 (Rewarded_strategy < Not_rewarded_strategy). Participants with rewards seem to be stimulated by the performance-based monetary system. Compared to non-rewarded participants, the extrinsic factor of 7 USD for 30 experiment minutes increased their efforts resulting in higher strategy development levels. This result is similar to those of other studies, which find a link between strategy development and incentives (e.g., Bonner, & Sprinkle 2002; Sprinkle 2000; Wright 1990).

Table 7: Strategy development

| Wilcoxon signed ranks test ^a | Z | Significance ^b |
|----------------------------------------------------------------------|--------|---------------------------|
| Not_rewarded_strategy ^d vs Rewarded_strategy ^c | -1.890 | 0.030 |

^a This table shows the significance and Z score from the Wilcoxon signed ranks test, measuring strategy development.

^b Since the pairs (Rewarded pairs are 4 vs 0 pairs for not rewarded; 2 ties) are in direction of the hypothesis, the significance is treated as one-tailed. This clearly shows the difference between the levels of strategy development. The simple mean (4,5 vs 2,54) of the both groups also indicates that there are clear differences between the two groups.

^c Rewarded_strategy - People who manage to get monetary rewards

^d Not_rewarded_strategy - People who did not managed to get monetary rewards.

4.4. H4: The effect of monetary incentives on application and comprehension across individuals with low and high perceptual differentiation

H4 targets monetary incentives and level of perceptual differentiation in application and comprehension questions. The Mann-Whitney U test shows that the sample size decision rule pair has a significance of $p = 0.066$, which is yet again very close to the 0.05 benchmark value. Taking into account our small sample size, again we feel obligated to reject the hypothesis. We propose that there are differences between rewarded and not rewarded subjects in the task on sample size application. A possible explanation for this could be that participants found the sample size question difficult. Thus, not rewarded subjects failed to answer it correctly as a whole. Due to lower levels of strategy development (4.5 vs. 2.54 average strategy level), they did not manage to get maximum points on this question. This finding is different from Awasthi and Pratt (1990), who found no significant difference in any of the decision rules.

Table 8: General testing of decision rules

| Z | Significance ^b | Test statistics ^a | |
|--------|---------------------------|---------------------------------------------------|--|
| | | Pairs ^c | |
| .000 | 1.000 | No_reward_conj_2 - Reward_conj_2 ^c | |
| -.577 | .564 | No_reward_sample_2 - Reward_sample_2 ^c | |
| -.447 | .655 | No_reward_sunk_2 - Reward_sunk_2 ^c | |
| -1.835 | .066 | No_reward_sample_3 - Reward_sample_3 ^c | |
| -1.000 | .317 | No_reward_conj_3 - Reward_conj_3 ^c | |
| -.535 | .593 | No_reward_sunk_3 - Reward_sunk_3 ^c | |

^aThis test measures a general comparison between rewarded and not rewarded answers across the three decision rules in both comprehension and application.

^bOnly the sample size 3 is near the near rejection region

^cNo_reward_conj_2 - This includes the answers which did not bring monetary reward

^cReward_conj_2 - This includes the which brought monetary reward

^cNo_reward_sample_2 - This includes the answers which did not bring monetary reward

^cReward_sample_2 - This includes the which brought monetary reward

^cNo_reward_sunk_2 - This includes the answers which did not bring monetary reward

^cReward_sunk_2 - This includes the which brought monetary reward

^cNo_reward_conj_3 - This includes the answers which did not bring monetary reward

^cReward_conj_3 - This includes the which brought monetary reward

^cNo_reward_sample_3 - This includes the answers which did not bring monetary reward

^cReward_sample_3 - This includes the which brought monetary reward

^cNo_reward_sunk_3 - This includes the answers which did not bring monetary reward

^cReward_sunk_3 - This includes the which brought monetary reward

4.5. Performance of individuals with low and high perceptual differentiation in the presence of incentives

In testing H4, the distinction of participant scores on each type of question (comprehension and application) form the two pairing variables. For example, the points of subjects with high perceptual differentiation in the conjunction application question were paired with the points scored by individuals with low perceptual differentiation. In this way, six pairs were formed (3 for application and 3 for comprehension). The Mann-Whitney U test shows a difference in the groups with levels of high and low perceptual differentiation in the sunk cost and sample size comprehension questions (cf. Table 10). The significance is again close to the rejection region, and the results for the group of high perceptual subjects are in the direction of the hypothesis. Both of these facts are separately sufficient for us to propose that individuals with high level of perceptual differentiation have more correct answers under reward schemes. These conclusions differ from Awasthi and Pratt (1990), who find sufficient differences only in the payment group in the application of conjunction probability. However, a large number of other studies find in general a positive effect of incentives in shared rewarding system (e.g., Hannan, Krishnan, & Newman 2008; Newman, & Tafkov 2014; Rankin, & Sayre 2011).

Table 9: Low vs. high PDs in application and comprehension

| Test statistics ^a | | |
|------------------------------|--------------------|------------------------------|
| Z | Significance | Pairs ^d |
| -1.000 | .314 ^b | High_conj_2 - Low_conj_2 |
| -1.000 | .157 ^c | High_sample_2 - Low_sample_2 |
| -1.000 | .157 ^c | High_sunk_2 - Low_sunk_2 |
| .000 | 1.000 ^b | High_conj_3 - Low_conj_3 |
| -1.000 | .314 ^b | High_sample_3 - Low_sample_3 |
| -1.000 | .314 ^b | High_sunk_3 - Low_sunk_3 |

^a This test measures the high and low under payment. The data were splitted according to the payment conditions. In this way we could have high and low PDs in the payment group in both comprehension and application decision rules.

^bThe significance is two-tailed

^cThe significance is one-tailed

^d High_conj_2 - High PD in conjunction comprehension

^d Low_conj_2- Low PD in conjunction comprehension

^d High_sample_2 - High PD in sample comprehension

^d Low_sample_2 - Low PD in sample comprehension

^d High_sunk_2- High PD in sunk comprehension

^d Low_sunk_2- Low PD in sunk comprehension

^d High_conj_3 - High PD in conjunction application

^d Low_conj_3- Low PD in conjunction application

^d High_sample_3 - High PD in sample application

^d Low_sample_3 - Low PD in sample application

^d High_sunk_3- High PD in sunk application

^d Low_sunk_3- Low PD in sunk application

5. DISCUSSION AND CONCLUSION

We posed that monetary incentives stimulate individuals to employ their cognitive characteristics in comprehension and application of familiar decision rules. Several different hypotheses tested the various hypotheses. First, we looked at personal characteristics in applying the three decision rules in complex cases. Second, the effect of incentives of two dimensions of effort (a) time and (b) strategy development, and lastly the effect of monetary rewards on the number of correct answers in a group of subjects with low and high perceptual differentiation. The results of the experiment show that perceptual characteristics do not affect the number of correct answers in the no incentive condition. Instead, we suggest that subjects use their knowledge and intuition to answer the comprehension and application questions within the three decision rules: conjunction probability, sample size, and sunk cost. Introducing incentives affects the time used, and the way subjects respond to the different questions. Notably, high perceptual differentiation participants demonstrated that they needed less time to apply the decision rules. The monetary rewards affected the way subjects thought about responding to the questions. Individuals with monetary rewards showed higher levels of strategy development. Lastly, when controlling for the incentive factor, we found that high perceptual differentiations were related to more correct answers.

Subjects with high perceptual differentiation performed notably better in the sunk cost and sample size comprehension questions.

5.1. Implications

This study has implications for both accounting research and practitioners because it combines and reveals (1) effects of cognitive characteristics, (2) the dimensions of effort and the (3) effects of incentives. A valuable implication is about time. Specifically, this study implies that individuals with high and low perceptual differentiation are not affected by traditional experimental theory in effort duration. Individuals with a high level of perceptual differentiation obtain the necessary skills to see concealed elements, and monetary incentives does not motivate them to spend more time (Evans, Richardson, & Waring 2013).

Another implication concerns the positive effect of incentives. The contrast, created by H1 (not controlling for incentives) and H4 (controlling for incentives), suggests that the role of perceptual differentiation is decisive for the effect of incentives. This could be beneficial for both academics and practitioners interested in improving performance and rewarding systems. Based on Fessler (2003), these results are relevant when the task itself offers either extrinsic or intrinsic rewards. For extrinsically motivated tasks that require high perceptual differentiation (e.g., managing investments), performance-based rewards should stimulate higher levels of performance. For tasks that also require high perceptual differentiation but offer intrinsic rewards (e.g., treating patients in the medical field), our results suggest that performance-based pay might not be conducive. The findings for educational factors (e.g., Dane, & Pratt 2007; Hodgkinson, Langan-Fox, & Sadler-Smith 2008; Nofle, & Robins 2007; Zhang 2004), strategy development (e.g., Bonner, & Sprinkle 2002; Newman, & Tafov 2014; Sprinkle 2000; Wright 1990), and positive effect of monetary incentives (e.g., Casas-Arce, & Martinez-Jerez 2009; Hannan 2005; Hannan, Krishnan, & Newman 2008; Newman, & Tafov 2014; Rankin, & Sayre 2011) are in line with contemporary literature. Effort duration, however, (Bonner, & Sprinkle 2002; Dobbs, & Miller 2009; Samuels, & Whitedcotton 2010) is opposite to what experimental theory suggests. The literature proposes that under monetary incentives, the time periods are longer.

It should be acknowledged that the follow-up use of ANOVA and its finding is in alignment with other studies (e.g. Evans et al., 2015; Zhang et al., 2005; Zhang, 2004) confirming that perceptual differentiation is related to visual disentanglement and coping in a complex environment.

5.2. Limitations and future research

The limitations of this paper are avenues for future research. First, a limitation of this study is the sample size ($n=15$) compared to other studies (Awasthi, & Pratt 1990; Butler, & Ghosh 2014; Sprinkle 2000). Small samples affect the statistical power of the tests and reduce the computational power of the applied statistical methods. Cohen (1988) recommends that in statistical tests with 5-per cent significance levels and a statistical power of 0.80, a typical sample size should be 95-100 participants. Huelsbeck et al. (2011) faced the same problem in their investigation where they failed to demonstrate how an assumed business model (cause-and-effect-chains) contributed to an organization's performance. They acknowledge that their small data *sample* failed to render tests below the p-value of 0.05. Yet, they argue that it would not be fully valid to assume that the business model had not contributed to organizational performance over the long existence of the organization (*full population*). Future studies can avoid conjecturing by employing a bigger sample.

Second, the pictures used in the embedded figures test were very similar to the original test. Yet, they were taken as free content from a website (<http://www.pratiyogi.com/topics/embedded-figure/1540>). Future studies can apply computer-based EFT tests that are more flexible and offer better control over the test. They also use Witkin et al.'s (1971) methodological guidelines but require a fee due to the improved digital experience.

Thirdly, the participants were not given a flat participation reward. Although we made two incentive groups, they were produced as dummy variables after the experiment. The study was still able to produce

satisfactory results in H2 and H3. Future studies might employ both performance-based and flat reward systems.

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THE BIG FIVE TRAITS, MOODS, AND INVESTMENT DECISIONS IN EMERGING STOCK MARKETS

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dx.doi.org/10.18374/IJBR-16-5.8

ABSTRACT

The study explored the effects of the Big Five traits and moods on investment performance of individual investors trading on the Vietnam stock market. The author used in-depth interviews, a pilot survey involving 50 investors, and then questionnaires distributed to 500 individual investors, and 465 valid returned ones. Results showed that Openness to experience (OPEN), Agreeableness (AGR), and Neuroticism (NEU) had direct impact on negative moods. Extraversion (EXT) directly influenced positive moods. Conscientiousness (CON) directly affected investment decisions. More notably, EXT had the significant indirect impact on investment decisions through the mediation of positive moods. For managerial decisions, investors are always in positive moods before making investing decisions. Moreover, investors who are prone to OPEN, AGR and NEU prudently consider joining in the financial investment.

Keywords: moods, investment decisions, the Big Five traits, Vietnam stock market.

1. INTRODUCTION

Vietnam stock exchange, founded in 2000, consists of the Ho Chi Minh City stock exchange (HOSE) and the Ha Noi stock market (HAX). The share market capitalization in 2015 reached approximately USD 62 billion, equivalent to 34 per cent of the Vietnam GDP in 2015 (<http://bnews.vn/>). In addition, the total number of private investors' accounts in the Vietnam stock market was 1,552 million in 2015 (<http://www.baomoi.com>). This number makes up such a small percentage of the overall population around 90 million. To motivate more investors to participate in the stock market, State securities commission of Vietnam has more positive changes relevant to securities law that bring benefits for investors (<http://vanban.chinhphu.vn>). Importantly, through in-depth interviews, experts emphasized that "personality traits and moods are one of the factors affecting investment decisions". These ideas are also consistent with prior scholars. Schwager (1993) stated "trading is emotion and it is mass psychology, greed and fear." (p.49). Recent researchers mentioned the correlation between investors' personality traits and stock market investment (Gherzi et al., 2014; Rizvi & Fatima, 2015), between moods and financial decisions under risk and/or uncertainty (Shu, 2010; Harding & He, 2015; Lepori, 2015). Nevertheless, there have rarely been articles in terms of the three-factor relationship including personality traits, mood and investment decisions of private investors trading in emerging stock exchanges. The study, accordingly, expects to discover the direct and indirect the effects of the Big Five traits on investment decisions.

2. LITERATURE REVIEW

2.1. Brief history of moods, personality traits, and investment decisions

Moods are defined as "the appropriate designation for affective states that are about nothing specific or about everything – about the world in general" (Frijda 2009, p.258). Moods have global effects and have no objects, whereas emotions focus on a particular object (Parkinson et al., 1996). Unlike emotions, moods typically last longer than emotions (Ekkekakis, 2013). To measure moods, McNair et al. (1971) design the profile of mood states (POMS) consisting of six distinct mood states such as tension, depression, anger, vigor, fatigue, and confusion. POMS is not the most appropriate option because

“exercise might have influenced components of mood other than the six tapped by this measure” (Ekkekakis, 2013, p.323). Over the past decade, Watson et al. (1988) designed the positive and negative affect schedule (PANAS) which stress two primary dimensions of positive and negative moods. The positive effect reflects “the extent to which someone feels enthusiastic, active, and alert”, conversely, the negative effect is considered as a “general dimension of subjective distress and unpleasurable engagement” (Watson et al., 1988, p.1063). The PANAS has become “one of the most widely used measures of effect” (Ekkekakis 2013, p. 327).

Personality is defined as “that pattern of characteristic thoughts, feelings, and behaviors that distinguishes one person from others and that persists over time and situation” (Phares, 1991, p.4). Personality traits primarily comprised 18,000 items that made psychologist a “semantic nightmare” (Allport, 1937). Over past decades, Cattell et. al. (1970) reduced from 4500 trait terms to 35 dimensions, and then sixteen ones (Cattell et al., 2008). Subsequently, Eysenck (1994) suggested only three dimensions including extraversion, neuroticism and psychoticism. More notably, McCrae & Costa (1987) proposed five major domains as the Big Five traits embracing Openness to experience (OPEN), Conscientiousness (CON), Extraversion (EXT), Agreeableness (AGR), and Neuroticism (NEU) which are broadly used because “it can capture, at a broad level of abstraction, the commonalities among most of the existing systems of personality traits” (John & Srivastava, 1999, p. 122).

An investment is “the current commitment of money or other resources in the expectation of reaping future benefits” (Bodie et al. 2014, p.5). The difference between what people put in and what they obtain back is the return (Feibel, 2003). Naturally, people wish to invest aims to achieve profits as expected. Investment decisions, therefore, are measured by the return on an investment portfolio or on initial investment and the extent of investor satisfaction (Lin & Swanson 2003; Pasewark & Riley, 2010).

2.2 Recent research in terms of the research model

Personality traits and moods

Wilt et al. (2012) explored the effects of trait extraversion on trait positive affect through the mediation of aggregated extraversion states and aggregated positive affect states. It also implied that undergraduates might be able to increase their happiness by self-regulating their extraverted states. This result was consistent with both authors: McNiel et al (2010) and Hirsh et al (2010) in spite of different research methods.

Specifically, McNiel et al (2010) employed the qualitative approach by using 10-minute dyadic discussion to 96 undergraduate participants and resulted that state extraversion had a strong impact on positive effect and smaller but still strong effects on pleasant and activated affect. Conversely, Hirsh et al (2010) used mix methods including interviews and surveys to 137 undergraduate students and discovered a significant interaction between extraversion and positive affect. Additionally, an experimental method was used by McNiel & Fleeson (2006) to define causal status of state extraversion and neuroticism. Results showed that people had more positive impact when suggested performing extraverted rather than when proposed to work introverted; people had negative influences when asked to do neurotic rather than when asked to perform stable.

A further approach applied by Lucas et al (2004) was a meta-analysis to report their research consequences, in which extraverts were happier than introverts and extraverts strongly reflected to pleasant situations. More interestingly, using three various cases, Lischetzke & Eid (2006) found out the role of mood regulation in explanation of why extraverts were happier than introverts. That is, when faced with challengeable conditions, extraverts maintained positive impact balance rather than introverts. In a workplace environment, Gomez et al (2002) surveyed 143 participants from the ages of 18 to 25 to compare how neuroticism, extraversion and neuroticism were involved in processing pleased and unpleased emotional information.

These authors concluded that extraversion was positively correlated with the processing of pleasant information. In contrast, neuroticism had positive association with the processing of unpleasant information. Zellars et al. (2004) also surveyed 290 nurses working for two hospitals in the Southeast and

discovered that extraversion predicted the reduced achievement component of burnout, whereas neuroticism forecasted the exhaustion and depersonalisation integrations.

Additionally, the authors explored mediating roles of positive moods in the association between extraversion and accomplishment, and of negative moods in the correlation between neuroticism and exhaustion. Apparently, not many researches are relevant to the relationship between the Big Five and positive mood (POSMOD) and negative mood (NEGMOD), particularly on the stock markets. Hence, the study proposes to test the following models:

$$\begin{aligned}\text{POSMOD}_i &= \alpha + \beta_1\text{OPEN}_i + \beta_2\text{CON}_i + \beta_3\text{EXT}_i + \beta_4\text{AGR}_i + \beta_5\text{NEU}_i + \epsilon_i \quad (1) \\ \text{NEGMOD}_i &= \mu + \ell_1\text{OPEN}_i + \ell_2\text{CON}_i + \ell_3\text{EXT}_i + \ell_4\text{AGR}_i + \ell_5\text{NEU}_i + \eta_i \quad (2)\end{aligned}$$

Where:

i: 1,2,3,...,465.

α : the mean of POSMOD; μ : the mean of NEGMOD

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5; \ell_1, \ell_2, \ell_3, \ell_4, \ell_5$: the coefficients

ϵ, η : random error

POSMOD: positive moods, NEGMOD: negative moods

OPEN, CON, EXT, AGR, NEU: the Big Five traits.

Personality traits and investment decisions

Rizvi and Fatima (2015) studied the relationship between personality traits and the stock investment by using online surveys to 100 investors.

Results showed that age group (18-28 and 29-39 ages), gender (dominant male), number of dependents, income level, extraversion, agreeableness, conscientiousness, neuroticism and openness personality dimension had significant impact on stock market investment. In addition, many prior scholars explored the significant relationship between neuroticism and negative market returns (Gherzi et al., 2014), between conscientiousness and risk aversion, openness and cognitive biases, and agreeableness and socially responsible investment (Nga and Yien, 2013). Nevertheless, Nga and Yien (2013) focused only on the impact of personality traits and demographics of general Y on financial decision-making and surveyed undergraduate students in Malaysia.

The significant effects of conscientiousness, openness, extraversion and neuroticism on investment biases were also studied by Lin (2011) in Taiwan stock market, but rarely exhibited in the Vietnam stock exchange. The study, accordingly, tests the following model relative to the association between individual investors' the Big Five and investment decisions (DEC):

$$\text{DEC}_i = \varsigma + v_1\text{OPEN}_i + v_2\text{CON}_i + v_3\text{EXT}_i + v_4\text{AGR}_i + v_5\text{NEU}_i + \zeta_i \quad (3)$$

Where:

i: 1,2,3,...,465.

ς : the mean of DEC

v_1, v_2, v_3, v_4, v_5 : the coefficients

ζ : random error

DEC: investment decisions

OPEN, CON, EXT, AGR, NEU as mentioned in (1) and (2)

Moods and investment decisions

Harding & He (2015) studied the relationship between investor moods and the determinants of stock price with 198 participants – approximately 57% of female. The exploration was that when investor moods become worse, the level of risk aversion increased in male, not female investors.

The changing in mood did not influence forecasts of earnings or cash flows in the future. In other words, Lepori (2015) used major TV series finales in the interval from 1967 to 2012 to study the relationship among investor moods and demand for stocks and explored that when U.S. stock returns reduced, there was an increase in watching the show.

Especially, this impact was stronger for small-cap and high-volatility, and ones who were in negative moods had a decrease in investing risky assets. Shu (2010) also found out a positive correlation of investor moods with equity and bill price: when an asset's price was higher, the mood was better, conversely, expected asset returns negatively correlated with investor moods. Grable & Roszkowski (2008) researched the relationship of moods and the willingness taking financial risks by surveying 460 participants with ages of 18-75.

Results indicated that people being in a happy mood had a positive correlation with having a higher level of financial risk tolerance. Apparently, there have been few previous researches in terms of this relationship, particularly in Vietnam. Hence, the study suggests the following model of the relationship between individual investors' moods and investment decisions:

$$DEC_i = \psi + \Omega_1 POSMOD_i + \Omega_2 NEGMOD_i + \varepsilon_i \quad (4)$$

Where:

i: 1,2,3,...,465

ψ : the mean of DEC

Ω_1, Ω_2 : the coefficients

ε_i : random error

DEC, POSMOD, NEGMOD as explained in (1), (2), (3)

Impressively, the study proposes the indirect effects of personality traits on investment decisions through the mediation of positive and negative moods. Basing model (1), (2), and (4), the model (5) is designed as follows:

$$DEC_i = \beta_1^* \Omega_1 OPEN_i + \beta_2^* \Omega_1 CON_i + \beta_3^* \Omega_1 EXT_i + \beta_4^* \Omega_1 AGR_i + \beta_5^* \Omega_1 NEU_i + \ell_1^* \Omega_2 OPEN_i + \ell_2^* \Omega_2 CON_i + \ell_3^* \Omega_2 EXT_i + \ell_4^* \Omega_2 AGR_i + \ell_5^* \Omega_2 NEU_i \quad (5)$$

3. METHOD

3.1 Research method, samples and research techniques

This study employed mixed methods including in-depth interviews and surveys. The aim of these interviews was to define the key behavioural factors affecting investment decisions. And then, a pilot test was performed after matching well with the item wording.

Lastly, questionnaires were delivered to individual investors trading on the Vietnam stock market. The study used questions with 5-point Likert scales of personality traits from Kovaleva et al. (2013), positive and negative moods from Watson & Clark (1992) and investment decisions from Pasewark & Riley (2010).

The study also met Hair et al (2014)'s standards of the minimum sample size, that is, the number of participants should be more than 5 times the number of items, or at least a hundred. The total number of respondents in this study was 500, and 465 valid returned questionnaires. Tests for reliability and validity of the model are performed by SPSS and AMOS software - SEM with CFA.

3.2 Factor analysis, the reliability and validity of this model

Firstly, for the test of reliability, Hair et al. (2014) suggest that Cronbach's alpha should be from 0.6. The KMO and Bartlett's test are from 0.6 to up and the accepted significant level (p) is not more than 0.05. Initial Eigenvalue is greater than 1 and cumulative percentage is not less than 50%.

Factor loadings of the items on a factor are greater than 0.3, the corrected item-total correlation index is 0.3 and the rotation sums of squared loadings is more than 50%. With extraction method of principal axis factoring and rotation method of promax with Kaiser Normalization, factor loadings were divided into 8 groups including Negative moods (NEGMOD), NEU, positive moods (POSMOD), CON, investment

decisions (DEC), AGR, EXT, and OPEN. All factor loadings were satisfied with conditions as mentioned, particularly Cronbach's alpha of all variables were greater than 0.7.

Secondly, the assessment of the structural model validity - overall fit: Most Goodness-of-fit (GOF) indices were within a range that would be associated with good fit. First, the overall model, Chi square (χ^2), was 394.959 with degrees of freedom.

The p-value associated with this result was .000 ($p < .05$). Second, the value for RMSEA, an absolute fit index, was .045 below the .08 guideline for a model with 23 measured variables and a sample size of 465. Using the 90% confidence interval for this RMSEA, the study concluded the true value of RMSEA was between .038 and .052.

Next, the standardized root mean square residual (SRMR) with a value of .0461 was below the conservative cut-off value of .05. Finally, the normed (χ^2) of 1.946 was considered very well. These diagnostics suggested the model provides a good overall fit.

In addition, with standard estimates, the average variance extracted (AVE) estimated range from 51.7% for NEDMOD to 75.9 % for AGR. All exceeded the 50 percent as detailed in Table 1. Construct reliabilities (CR) ranged from .76 for OPEN to .857 for NEU, and .863 for AGR. These exceed .7, suggesting adequate reliability. Taken together, the evidence supported the convergent validity of the measurement model.

Additionally, the model fitted relatively well. As a result, all the items were adequate evidence of convergent validity and discriminant validity where AVE of all variables was greater than their estimated correlation.

Furthermore, all standardized residual covariance had a value under the absolute value of 2 (Hair et al., 2014) or 2.58 (Byrne, 2013), which met the standards of good measurement practice, appeared to hold quite well.

Eventually, the test of modification indices: most of the values above 4.0 were associated with the items in the construct. There were no large values for the variables. It concluded that the model had a solid theoretical foundation and questionnaire measured these key construct well.

TABLE 1: AVE AND CR

| | NEGMOD | NEU | POSMOD | CON | DEC | AGR | EXT | OPEN |
|------------|--------|-------|--------|-------|-------|-------|-------|-------|
| AVE | 0.517 | 0.67 | 0.562 | 0.519 | 0.518 | 0.759 | 0.671 | 0.625 |
| CR | 0.839 | 0.857 | 0.79 | 0.763 | 0.758 | 0.863 | 0.803 | 0.760 |

4. RESULTS

4.1. Characteristics of respondents

In Table 2, most investors were male with 58.8% of the total sampling while the remaining being female. The investors' personal information makes up the highest proportion as follows: 28.4% of them ranged in age from 26 to 35, 70.9% had a university degree, 44.9% earned between 6 and 12 million VND per month, 49.1% worked for less than 5 years of work experience. Particularly, 66.7% of them had received some type of formal training on securities investment.

TABLE 2: SUMMARY OF RESPONDENTS' CHARACTERISTICS

| Characteristics | Highest proportion (%) |
|-----------------------------------------------|------------------------|
| Male | 58.8 |
| Age: 26-35 | 28.4 |
| University degree | 70.9 |
| Income level: 6-12 million | 44.9 |
| Work experience: less than 5 years | 49.1 |
| Seniority of stock investment: 1-3 years | 31.6 |
| Training courses: yes | 63.5 |
| The amount of investment: 100-300 million VND | 26.7 |

4.2 Results of direct effects

With standardized estimates, the SEM results showed the direct relationships as follows:

$$\text{POSMOD}_i = .32 \text{ EXT}_i \text{ (1')}$$

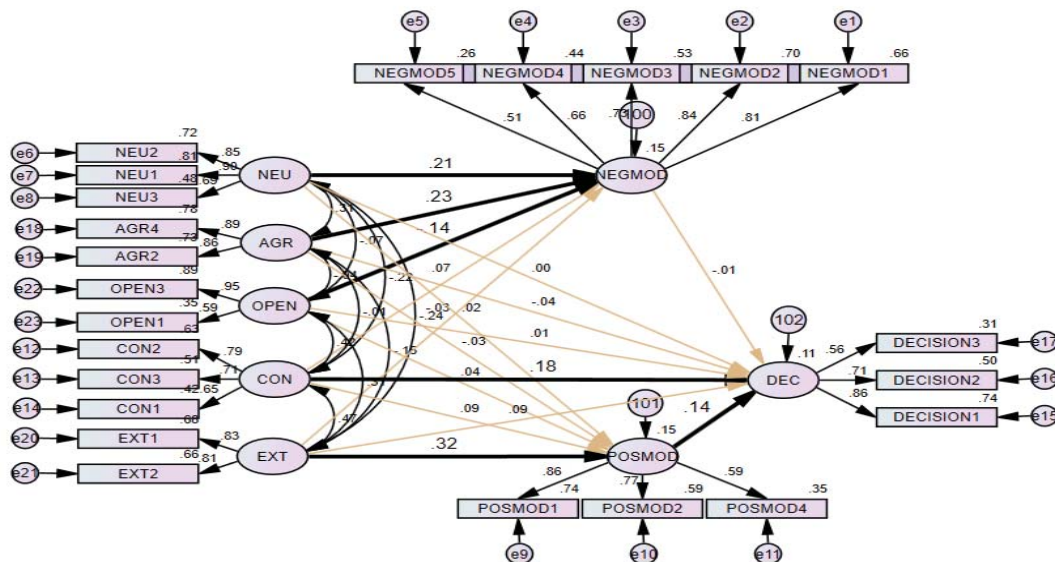
$$\text{NEGMOD}_i = -.14 \text{ OPEN}_i + .23 \text{ AGR}_i + .21 \text{ NEU}_i \text{ (2')}$$

$$\text{DEC}_i = .18 \text{ CON}_i \text{ (3')}$$

$$\text{DEC}_i = .14 \text{ POSMOD}_i \text{ (4')}$$

First, model (1') showed that only EXT had significant positive influence on POSMOD at 0.32 ($p < 0.05$), in which it can be interpreted that when EXT goes up/down by 1 standard deviation, POSMOD goes up/down by 0.32 standard deviation. Second, model (2') reported that AGR and NEU had significant positive effect on NEGMOD at 0.23, and 0.21, respectively, whereas OPEN negatively affected NEGMOD. This can be explained as follows: when AGR or NEU increases/decreases by 1 deviation standard, NEGMOD increases/decreases by 0.23 or 0.21, respectively. In contrast, if there is an increase/decrease in OPEN trait, a decrease/increase in NEGMOD occurs. Likewise, only CON and POSMOD positively influenced DEC in model (3') and (4'), respectively. Figure 1 depicts these relationships:

Figure 1: Path coefficient of the Investment decisions



4.3 Results and significance of indirect effects and total effects.

The study explored the only EXT had positive indirect impact on DEC as the model (5') presented:

$$DEC_i = 0.32*0.14EXT_i = .045 EXT_i (5')$$

Conceivably, the SEM result reported the total effects of the Big Five traits and positive mood on investment decisions at 0.365. Details showed in Table 3:

TABLE 3: DIRECT, INDIRECT AND TOTAL OF CAUSAL EFFECTS

| Variables | Causal effects | | |
|-----------|----------------|---------------|--------------|
| | Direct | Indirect | Total |
| CON | 0.18 | --- | 0.180 |
| EXT | --- | 0.045 | 0.045 |
| POSMOD | 0.14 | --- | 0.140 |
| Total | 0.32 | 0.0448 | 0.365 |

5. DISCUSSION AND RECOMMENDATIONS

The study first explored the direct relationship among the Big Five traits, moods, and investment decisions. More specifically, EXT positively affected POSMOD. AGR and NEU positively influenced NEGMOD, and OPEN had negative impact on NEGMOD. Moreover, CON and POSMOD positively affected DEC. Second, the indirect relationship of EXT on DEC was found out. These results are consistent with many previous researches conducted by Hirsh et al. (2010), McNiel and Fleeson (2006), Lischetzke and Eid (2006), Gomez et al. (2002), and Rizvi and Fatima (2015).

Investors whose trait is prone to EXT are often outgoing, sociable, and enthusiastic. Likewise, people who possess more CON trait than other traits frequently do things effectively, do a thorough job, make plans, and follows through with them. Importantly, people who are in positive moods are usually cheerful, happy, and delighted to invest in stocks on the stock market. Both EXT and CON traits had the positive impact on investment decisions. Conversely, investors whose propensity is AGR or NEU often tend to find fault with others and sometimes rude to others, or often get nervous easily, worry a lot, and get depressed. These investors feel upset, sad, tired, ashamed, and usually display fear for investing in securities. However, investors who tend to own the dominant OPEN trait, the more they value artistic and have an active imagination, the less they feel stressful or depressed about financial investment.

In summary, investors are always in the positive mood states when investing in securities on the stock exchange. Furthermore, investors who own the dominant EXT and CON traits, they keep investing in stocks. On the contrary, if investors are prone to the AGR, OPEN, or NEU, particularly, in negative moods, they deliberately consider before making investing decisions.

6. CONCLUSION AND FURTHER RESEARCH

The study met the objectives of the study. Firstly, Conscientiousness and positive moods directly influenced investment decisions. Conscientiousness and Extraversion directly impacted positive moods. Agreeableness, Neuroticism, and Openness to experience directly affected negative moods. In addition, the findings showed that Extraversion had the significant indirect impact on investment decisions. Finally, some recommendations are proposed to individual investors trading on the Vietnam stock market.

The study used mix methods including in-depth interviews and surveys. Factor loadings, CFA, and SEM were applied for testing the reliability and validity and exploring results of the research. Furthermore, the mediation analysis and significant level of the mediated variable are concretely presented. The significant direct and indirect effects were fully explained to achieve the research objectives as well as assumptions supported. In general, this research contributes to the field of personality traits, mood and investment decisions of individual investors. Further researches should take notice of other factors influencing investment decisions such as investor sentiment, perceived risk, and uncertainty.

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SENSE OF CONTROL AND ITS IMPACT ON SATISFACTION AMONG HEALTHCARE CUSTOMERS

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[dx.doi.org/10.18374/IJBR-16-5.9](https://doi.org/10.18374/IJBR-16-5.9)

ABSTRACT

This study, by characterizing healthcare service as an involving and potentially stressful event to the general public, examines whether the medical service user's sense of control affects their satisfaction with the service. The study posits that a healthcare service user may develop a sense of overall control during the service encounter when s/he has either behavioral control or cognitive control. A self-reported questionnaire was used to collect data from 280 actual healthcare service users. Analyses of data, carried out by using structural equation modeling, supported four out of five research hypotheses, indicating a meaningful relationship between patients' sense of control and their satisfaction with medical services.

Keywords: *sense of control, healthcare services, patient satisfaction, cognitive control, behavioral control*

1. INTRODUCTION

A growing number of healthcare organizations are embracing the philosophy of customer-oriented business. They view patients as customers and patient satisfaction is set as a high priority in their business framework. Hospitals and clinics are urged to be customer-focused and to strive to win their satisfaction (Ford and Fottler 2000). Healthcare organizations highly ranked in patient satisfaction are regarded as delivering better medical service, which makes them the preferred choices of the public. Alternatively, healthcare organizations with poor customer satisfaction suffer from low customer retention, high marketing costs, and reduced revenue.

From the customers' perspectives, purchase decisions for healthcare services are difficult and challenging. Service users have difficulties in evaluating the quality of services before, during, and even after receiving the service, due to the high credence qualities associated with many medical services. (Eleuch 2011). At the most fundamental level, the technicality and complexity of medical service may hinder patients from understanding the level of service quality being delivered (Arasli et al. 2008).

Quite a number of healthcare service users have reported experiences of helplessness and powerlessness during their initial interactions with medical service providers (Beinstock and Stafford 2006; Lee 2010). In this context, Kolodinsky (1993) characterized medical service encounters as an event harboring stress, anxiety, and frustration for many users. Once dissatisfied, users of medical services may not only stop patronizing the medical service provider, but they may also lose interest in treatment plans and seeking further medical assistance (Zandbelt et al. 2007).

Satisfaction and service quality in medical services sector is indeed a topic of importance not only to the individual but also at a societal level. Yet, in the healthcare marketing literature, only a few studies have addressed patient satisfaction in conjunction with stress or similar negative emotions that are widespread among medical service users.

This study proposes and explores healthcare service users' perception of control as a promising factor to help them effectively deal with negative emotion and to improve their satisfaction with medical services. For that purpose, the study presents and tests a research model that encompasses two unique routes by which medical service users may establish a sense of control during their service interactions. Furthermore, it probes into the effects of such psychological control upon patient satisfaction with the medical services.

2. LITERATURE REVIEW

2.1 Patient Satisfaction

Like other businesses, the importance of customer orientation has been widely recognized in the medical industry. Hospital administrators recognize service quality and patient satisfaction as a vital cornerstone for establishing the organization's profits and other financial outcome indicators (Vogus and McClelland 2016). In accordance with the trend, patient satisfaction has been a topic of steady interest in the academic field since 1990s (Sitzia and Wood 1997).

Patient satisfaction has been conceptualized as a positive cognitive state, which results from the favorable assessment of a patient's healthcare experience (Urden 2002). Patients tend to experience satisfaction when they receive the service of medical care that conforms well to their pre-encounter expectations. Patient satisfaction is recognized as a multi-dimensional concept, being affected by a variety of factors. Among them, the most widely recognized antecedents may be categorized as technical, interpersonal, or administrative (Russel et al. 2015). The technical dimension of medical services, also known as clinical quality among healthcare practitioners, deals with the quality of the core service. As such, technical service quality is determined largely by the healthcare provider's diagnostic and therapeutic expertise and the outcome of the service interaction (Dagger et al. 2007). The interpersonal dimension of medical services encompasses the quality of interaction between the patient and the medical service provider. Interpersonal service quality includes personalized attention, patient participation in decision making, communication and attitudes of service providers during the interaction (Dagger et al. 2007). Interestingly, studies have demonstrated that the interpersonal dimension has affected patients' satisfaction more strongly than the technical dimension of the healthcare service. (Gill and White 2009). Finally, the administrative quality element deals with those facilitative or supportive services which are essential to the delivery of the core service. This dimension of medical service includes factors such as timeliness, coordination, organization, and integration of healthcare services (Dagger et al. 2007). In addition to the aforementioned dimensions, a few other factors, such as environmental quality, have also been proposed as antecedents of patient satisfaction (Rust and Oliver 1993). Although these studies on healthcare service quality help to advance our understanding of medical consumer behavior, there are still a number of untapped research questions.

The nature of medical service encounters fosters a natural ground for healthcare customers to experience dissatisfaction. Patients, when they are interacting with healthcare service providers, tend to act out in subordinate roles due to the technical nature of the services being rendered (Lee 2010). Consequently, healthcare service users have a high propensity to experience psychological distress, have limited capabilities of developing a definite opinion, and have weak forms of opinion regarding the rendered services (McAllister and Dearing 2015). This, in turn, culminates an environment for healthcare customers to have a high likelihood of experiencing dissatisfaction (Ware and Davis 1983). Such tendency is reflected in empirical periodicals such as American Consumer Satisfaction Index, which reports that the US consumers' satisfaction with medical services is unfailingly lower than the overall industry average over the years (Fornell 2008). As such, Bendapudi et al. (2006) reported the prevalence of patients' stress and made a call for research in this field. The concept of sense of control, as it is presented below, is a promising factor that would address such concerns.

2. Sense of Control among Healthcare Customers

The concept of perceived control can be defined as one's perception of competence, mastery or superiority over an environment (White 1959). Perceived control, also known as personal control, is reported to be a factor that affects one's satisfaction with one's involvement in an aversive event. Specifically, when one develops the sense of control while dealing with a potentially stressful event, one has a high likelihood of experiencing constructive consequences such as comfort, satisfaction, self-efficacy, and happiness (Goldstein, 1989; Thompson and Spacapan 1991). On the contrary, in an environment in which one feels that one does not have control, one has a high propensity to experience negative consequences including depression, stress, burnout, helplessness, meaninglessness, and even an intention to abuse substances (Wall et al. 1996; Schat and Kelloway 2000). Researchers have examined perceived control and its consequences in a diversity of contexts including residence areas, workplaces, stores, hospitals, and nursing homes (Baum and Weiss 1987; Chipperfield et al. 2004;

Infurna and Gerstorf 2014; Sutton and Kahn, 1986). One of main tenets in this league of the research is that an individual's sense of control in an environment is instrumental in reducing one's stress and depression while enhancing one's psychological and physical well-being.

There is a variety of perspectives regarding the antecedents for individuals to perceive control. However, the most fundamental split on this issue may lie between actual control (*i.e.*, one's possession of the means to make changes in a given context) and perceptive control (*i.e.*, one's perception that one clearly understands the nature of an impending event) (Skinner 1996). That classification is similar to that of Averill (1973), who distinguishes behavioral control (whether one can actually exert influence on an event that one is dealing with) from cognitive control (whether one has a comprehensive understanding and predictability about the nature of an event that one is dealing with). This distinction has a number of meaningful implications for healthcare organizations planning to run a program that improves patients' sense of control. A review of each type of control is presented below.

2a. Behavioral Control

Behavioral control, or one's belief that one can effectively modify the nature of an imminent event, is the most widely accepted conceptualization of personal control. Several studies have operationalized one's perceived control as one's ability to change the objective nature of the situation (Litt 1988; Thompson 1981). Averill (1973) explained that, in dealing with a potentially stressful event, individuals perceive behavioral control under two situations: (1) when they believe that they are in a position of making such decisions as who administers the stimulus and how/when the stimulus will be encountered, and (2) when they believe that they have a set of behavioral choice options such as attack, avoidance, escape, and so on. The main tenet of this perspective is that in dealing with an aversive event, one's possession of response alternatives helps one perceive control over the situation and deal with the event more adaptively. Langer and Rodin (1976), in their landmark study, found that one's ability to make influences on one's environment had significant effects on satisfaction and well-being. By using nursing homes as a research setting, they demonstrated that those who had behavioral control (*i.e.*, opportunity to make changes in nursing home policy, small decisions and responsibilities to fulfill, and so on) experienced a significantly higher level of psychological and physical well-being than those who did not have such options (Langer and Rodin 1976). Research in the medical field also report positive consequences of establishing behavioral control on individuals' wellness (Helgeson 2003; McAllister and Dearing 2015). In summary, studies involving the theory of behavioral control posit that an individual's satisfaction in an environment is enhanced when s/he can effectively make changes as desired or when s/he has a set of behavioral options from which s/he may freely make choice to get personally desirable outcome.

2b. Cognitive Control

The concept of cognitive control surfaced as a research subject during the search for an explanation of why human beings prefer to have control. Researchers proposed that it might not be the availability of response choices *per se* but one's ability to incorporate an impending event into one's cognitive plan (Mandler and Watson 1966; Taylor 1989). The main tenet of the proposition is that when an individual believes that s/he has a comprehensive understanding about the nature of an imminent event, s/he becomes less averse to that event than those who do not have such capabilities (Miller 1979; Seligman and Miller 1979). According to this perspective, an individual is likely to perceive cognitive control by obtaining detailed information about an impending event and by understanding the specific nature of it. Averill (1973) distinguished such capability of subjectively incorporating an event into one's cognitive plan and referred to it as cognitive control. Langer and Saegart (1977) demonstrated the effects of cognitive control on stress and satisfaction in a supermarket context. In that field study, Langer and Saegart (1977) manipulated and compared two experimental conditions. In one condition, subjects were informed about the crowded shopping condition of the supermarket long before they carried out the shopping task of buying products in a shopping list provided by the researcher. In another condition, subjects were not provided with information regarding the crowdedness until just before they entered the supermarket to do the same shopping task. Compared to the subjects who were not informed until the final moment, those who were informed well in advance described their shopping tasks as more comfortable and enjoyable, and they reported experiencing less difficulty in finding items, less interference with other customers, and a lessened perception of crowding (Langer and Saegart 1977). Although the informed subjects did not have an ability to change the nature of the crowded shopping environment or a set of responses to

choose from to respond to the situation, they were able to predict the situation, which helped them deal with the situation more effectively. Thus, the theory of cognitive control posits that when one feels that one has sufficient information about an impending event, one is likely to experience cognitive control, which helps them deal with a potentially aversive event with less stress. Contrarily, when one feels that one is not adequately informed while dealing with the event, one has a greater chance of experiencing a higher level of stress, frustration, and naturally, dissatisfaction (Langer and Saegart 1977; Spada et al. 2010).

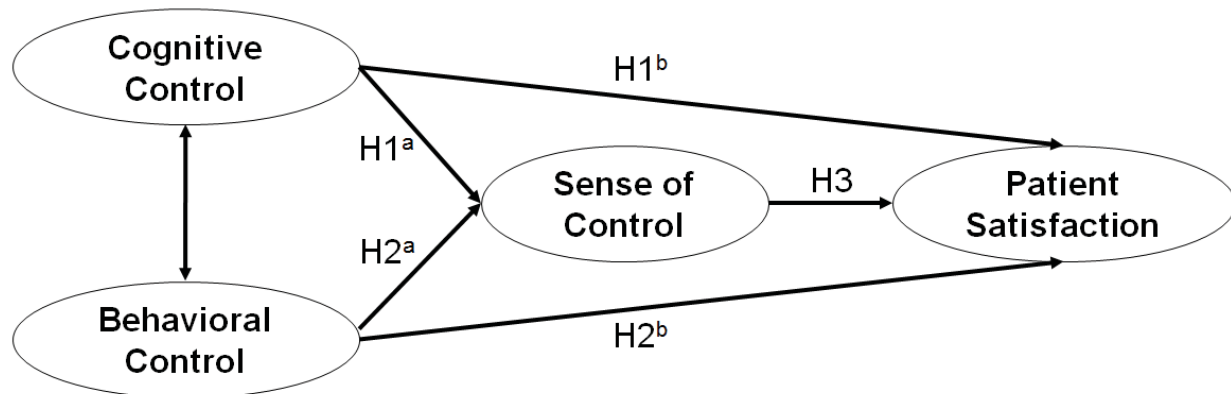
In summary, a healthcare customer may find his/her encounters with healthcare service providers less taxing when s/he establishes a sense of control during the encounter. Yet, the concept of perceived control is not simple and unidimensional, but rather, it is a complicated and multidimensional concept composed of interdependent yet separate concepts (Rodin et al., 1980). Indeed, the way healthcare customers perceive control in a medical setting can be an elusive issue. An application of the perspectives of behavioral control and cognitive control to the healthcare service context hints that healthcare service customers may develop a sense of overall control (1) when they believe that they can effectively make influences upon healthcare decisions relevant to them or (2) when they believe that they are adequately informed about the nature and consequences of the healthcare matters relevant to them. This study proposes and empirically investigates behavioral control and cognitive control as precursors of healthcare customers' sense of control. Furthermore, it examines the effects of healthcare customers' sense of control upon their satisfaction with healthcare service.

3. HYPOTHESES

This study, by characterizing healthcare service as an involving, and potentially stressful event to the general public, examines whether the medical service user's sense of control affects their satisfaction with the service. The study posits that a healthcare service user may develop a sense of overall control during the service encounter when s/he has either behavioral control or cognitive control. Then, each type of control is hypothesized to affect one's experience of overall control and satisfaction. To empirically investigate this reasoning, a research model and a set of hypotheses have been developed (Figure 1).

First, one's perception of cognitive control over a medical service encounter is likely to enhance one's sense of overall control and satisfaction with the services being rendered. Studies in psychology report that individuals tend to perceive control when they feel they are fully knowledgeable about the nature of an impending event and the personal consequences from the interaction with it (Langer and Saegart 1977). In dealing with technically complicated medical services which are performed by licensed professionals with skills, expertise, and experiences, few individuals are likely to have a complete understanding of the medical practices. A healthcare service user who feels that s/he fails in developing an adequate understanding about an imminent medical service may experience ambiguity and stress (Vollrath and Torgerson 2002). In contrast, a healthcare service user who feels that s/he thoroughly understands an imminent healthcare service is capable of incorporating the procedure and consequences of the service into his/her cognitive plan, making him/her establish a sense of control over the situation (Fiske and Taylor 1991). Furthermore, one's sense of cognitive control in a service environment may also be constructive for one to experience satisfaction with the service, as customers usually prefer to be informed in advance about what they are getting (Lovelock 1983). In addition, customers with a clear understanding of the service tend to maintain a higher level of motivation and willingness to comply with the service providers' requests. Further, such customers engage in goal-oriented behaviors, which positively influence one's likelihood of experiencing satisfaction (Dellande et al. 2004). Thus, health care customers' sense of cognitive control may exert a positive effect upon their satisfaction with the medical service. In this context, the following hypothesis is constructed.

H1^{a, b}. The higher the sense of cognitive control among healthcare service customers, the greater the customers' experience of overall control^a and satisfaction^b will be.

FIGURE 1: SENSE OF CONTROL AND SATISFACTION AMONG HEALTHCARE SERVICE CUSTOMERS

Second, one's perception of behavioral control is likely to affect his/her sense of overall control and satisfaction with a medical service encounter. Individuals perceive behavioral control when they feel that they have behavioral options from which they can choose freely and that they can effectively make changes in an environment as personally needed (Averill 1973). In the context of a healthcare service encounter, customers may perceive behavioral control when they believe that they are capable of exerting influences upon the design of their healthcare services. Such belief may be conducive for them to maintain a sense of overall control over the medical service. When an individual believes that s/he can exert influences and make changes in an environment, s/he tends to establish a sense of control in the environment (Langer and Rodin 1976). Furthermore, one's sense of behavioral control may also have a positive influence upon one's satisfaction with the service. In essence, a healthcare customer who perceives behavioral control is the one who believes that s/he is capable of customizing the service according to his/her personal preferences. Literature in marketing suggests that consumers have a good chance to experience satisfaction when they receive customized, rather than standardized, offerings (Pine 1993). Thus, one's sense of behavioral control may have a positive influence upon one's experience of satisfaction with a healthcare service. In this context, the following hypothesis is developed.

H2^{a, b}. The higher the sense of behavioral control among healthcare service customers, the greater the customers' experience of overall control^a and satisfaction^b will be.

Finally, those customers who establish a sense of overall control over a healthcare service may have a high propensity of experiencing satisfaction with the service. Individuals develop a sense of control when they believe that they are capable of receiving personally desirable outcomes in an environment (White 1959). Those healthcare customers who see themselves as competent and capable of making things happen are known to be more active in learning, task-oriented, and cooperative (Spreng and Olshavsky 1993). Such motivation and behavior are likely to enhance one's possibility of experiencing satisfaction with the service. Based upon this reasoning, the following hypothesis is formulated.

H3. The higher the sense of overall control among healthcare service customers, the greater their satisfaction will be.

4. METHODS

Data collection for the study was implemented by using survey research. A self-reported questionnaire was administered to 280 individuals who reportedly had used medical services in South Korea in the previous 6 months. The questionnaire was made up of three sections: three types of control (*i.e.*,

cognitive, behavioral, and overall control), dependent measure (*i.e.*, satisfaction), and a set of demographic questions. Likert scale was used as a response category for both control and satisfaction measures. A healthcare customer's perception of cognitive control was measured by a scale which included a person's understanding, predictability, and familiarity with the procedure and nature of the healthcare service. The concept of behavioral control was measured by asking questions dealing with the availability of choices, extent of exerting influences, and easiness of making changes in designing the healthcare service. One's sense of overall control was measured by a scale dealing with one's capability of getting the desirable healthcare outcomes and one's competence in dealing with healthcare matters. Satisfaction among medical service users was measured by using a three-item scale which addresses one's satisfaction with one's health and overall healthcare service quality.

In total, 241 useable responses were collected. Among them, 25 percent of the respondents were female and 75 percent male. The average age of respondents was 35.8. The respondents were well educated with more than 75 percent of them having a bachelor's degree or better. About 50 percent of the respondents had an annual income between \$30,000 to \$50,000, and 30 percent over \$50,000. A review of the respondents' demographic profile suggested that the sample was deemed to be sufficiently representative for the purpose of this study.

5. RESULTS

Before running statistical tests for hypotheses, reliability and validity of the scales used in the study were evaluated. All three scales dealing with one's perception of control were found to have acceptable reliability. That is, the reliability coefficients of the scales of cognitive control, behavioral control, and sense of overall of control were .78, .82, and .79, respectively. The measure of satisfaction also indicated an appropriate reliability (.83). After checking the reliability, a confirmatory factor analysis was performed for the measure purification purpose. An item measuring cognitive control and two items dealing with behavioral control were eliminated due to either cross-loading or poor factor loading. After the purification, all items pertaining to each construct showed factor loadings greater than .6 (presented in Table 1), thereby indicating convergent validity (Anderson and Gerbing 1988). An evidence of discriminant validity was also noted as was also evidenced as none of the confidence interval around the correlation estimates between the two factors (*i.e.*, ± 2 standard errors) included 1.0 (Anderson and Gerbing 1988). Finally, nomological validity was also observed as the correlations among constructs of the current study were found to be consistent with existing theories and research findings in marketing and psychology. Thus, the measures used in this study had sufficient reliability and validity, making them appropriate for a theory testing.

TABLE 1: CONSTRUCTS AND MEASURE ASSESSMENT

| Constructs and Items | Standardized Factor Loading* | t | Cronbach's α |
|---------------------------------|------------------------------|-------|---------------------|
| Cognitive Control | | | .78 |
| understanding | .78 | - | |
| predictability | .87 | 11.26 | |
| familiarity | .59 | 8.61 | |
| Behavioral Control | | | .82 |
| choice availability | .73 | - | |
| exerting influence | .88 | 11.19 | |
| making changes | .73 | 10.46 | |
| Sense of Control | | | .79 |
| ability to make influence | .75 | - | |
| ability to make final decision | .87 | 10.08 | |
| ability of get the most value | .65 | 9.52 | |
| Satisfaction | | | .83 |
| overall satisfaction w. health | .60 | - | |
| overall quality of service | .92 | 10.12 | |
| overall satisfaction w. service | .87 | 10.09 | |

* : Significant at .01

Hypothesis testing was performed by using structural equation modeling where the specified interrelationships among the study's four constructs were estimated while controlling measurement error (presented in Figure 1). The study's research model fits the data well as evidenced by satisfactory fit indexes (in Table 2) including an acceptable ratio of chi-square to degree of freedom (2.50, $p < .01$), both GFI and CFI being well above .9, and RMSEA below .08 (Hair et al., 2006). The research model accounts for 30.1% of variance of respondents' sense of overall control and 42.2% variance of healthcare customers' satisfaction with their medical services. Finally, the current study's research model has been compared with alternative models that include either more or fewer paths than that presented in Figure 1. None of them either enhanced the model fit or augmented our conceptual understanding about satisfaction among healthcare customers. Based upon this, the study's research model in Figure 1 can be considered as providing balanced and parsimonious estimates of the relationships among the set of variables in our data.

Hypothesis 1^a, which posits a positive influence of healthcare customers' cognitive control upon their sense of overall control over healthcare service, is supported. Furthermore, hypothesis 1^b, addressing a positive relationship between healthcare customers' cognitive control and their satisfaction with healthcare service, is also supported. Thus, cognitive control perceived by medical service customers exerts positive influences upon their experience of overall control over healthcare services as well as their satisfaction with them. Hypothesis 2^a, dealing with a positive relationship between healthcare customers' perception of behavioral control and their sense of overall control with healthcare service, is supported. However, hypothesis 2^b, suggesting that the positive influence from behavioral control to one's overall satisfaction with healthcare service, is not supported. The finding explains the importance of allowing medical customers the opportunities to make influences on healthcare matters so that they may develop a sense control over the service. Yet, such behavioral control alone was not sufficient for healthcare customers to experience satisfaction. After all, having a large number of treatment choices may have little influence upon the satisfaction of a patient with a dire medical need. Finally, the hypothesized effect of one's sense of control upon one's satisfaction with healthcare services (H3) is supported. The healthcare

customers who believe that they have control over the healthcare services tend to experience a high level of satisfaction.

TABLE 2: STANDARDIZED PATH COEFFICIENTS

| Path Modeled | (Hypothesis) | Coefficient | Result |
|-----------------------------------------------|--------------------|-----------------------------------|---------------|
| Cognitive Control → Sense of Control | (H1 ^a) | .37*** | Supported |
| Cognitive Control → Overall Satisfaction | (H1 ^b) | .42*** | Supported |
| Behavioral Control → Sense of Control | (H2 ^a) | .27* | Supported |
| Behavioral Control → Overall Satisfaction | (H2 ^b) | .07 | Not Supported |
| Sense of Control → Overall Satisfaction | (H3) | .28* | Supported |
| Fit Indexes: | | | |
| $\chi^2 = 114.85$, $d.f. = 46$, $p < .01$; | | GFI = .93; CFI = .95; RMSEA = .07 | |

*: Significant at .01

6. CONCLUSIONS

Increasing competitiveness in the healthcare industry forces medical organizations to become more customer-oriented. They must identify and fulfill patients' needs by accommodating their preferences in their service delivery system. Ultimately, they are expected to deliver quality services and provide satisfactory medical experiences for patients (Vogus and McClelland 2016). This study offers a set of unique empirical findings for healthcare organizations to enhance patient experiences. Specifically, it emphasizes the importance of the perception of control for healthcare service customers to experience satisfaction; further, it describes the ways such customers establish a sense of control during their healthcare service experiences.

Findings of the study are expected to provide new insights into the understanding of patients' satisfaction. Perception of control among patients is found to exert a meaningful influence on their satisfaction with medical services. This finding indicates the importance of arranging the healthcare service environment for customers to develop and maintain a sense of control during their medical service encounters. As far as the antecedents for one to maintain a sense of control over healthcare services are concerned, both cognitive control and behavioral control are found to exert significant influences. That is, a patient's perception of control over his/her medical service is determined by his/her capability of developing a thorough understanding and predictability about the medical practices (*i.e.*, cognitive control) as well as his/her capability of exerting influences and making changes as personally desired (*i.e.*, behavioral control). Cognitive control directly influences satisfaction. Yet, behavioral control alone does not exert a significant influence on patient satisfaction. These findings provide several managerial implications.

First, administrators of healthcare service organizations should keep in mind that patients prefer to maintain a sense of control over healthcare services. It is imperative to develop a healthcare service environment in which patients feel that they are the main force rather than a passive recipient of predetermined services. When patients feel that they are adequately informed about the medical services and that they are capable of making changes in medical services as personally desired, they develop a sense of control. Patients' perception of such control turns out to be an important antecedent of patient satisfaction. Thus, healthcare organizations should develop medical service arrangements in which patients believe that they are not only fully informed but also capable of making changes. A lack of such arrangement would make patients feel that they have little control over the medical services.

Second, medical service organizations should maintain effective communication mechanisms through which patients are provided with up-to-date information so that they feel adequately and clearly informed. Because cognitive control is found to have a direct influence upon the patient satisfaction, it is imperative for patients to perceive that they are properly informed regarding the healthcare services relevant to them. Just like with other services, surprises are usually not desired (Lovell 1983). Healthcare organizations must be equipped with communication channels that provide patients information before, during, and even after the medical service encounter. The content and the style in which the information is delivered are important in determining whether a communication will be effective (Swenson et al. 2004). Healthcare service providers should make an arrangement that helps patients feel that they are fully aware of the process and of the consequences of upcoming medical services. When a medical service user maintains a sense of cognitive control, s/he faces the potential stress and ambiguities involving the medical treatment more readily and willingly, thereby having a high chance to experience satisfaction with the service.

In conclusion, this article has proposed and investigated the sense of control among healthcare customers as an important precursor of patient satisfaction. Furthermore, the study has also explored alternative ways in which medical customers may develop a sense of control when they deal with healthcare services. This study's findings are expected to provide a foundation for healthcare organizations to fine-tune their customer-orientation strategies. We observe, not infrequently, that patients who are dissatisfied with their medical service providers become frustrated with the medical services and may even go as far as to give up on receiving the medical treatment. This study's perspective regarding the positive influence of control upon satisfaction should help healthcare organizations to deal with patient frustration, stress, and satisfaction. The demonstration of the positive relationship between the sense of control and satisfaction among medical service users should provide a meaningful ground for further academic endeavor as well. Future applications of this study's findings are highly expected.

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AN EMPIRICAL STUDY ON ORGANIZED RETAIL SHOPPING BEHAVIOR AND ATTITUDE OF CONSUMERS IN SAUDI ARABIA

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[dx.doi.org/10.18374/IJBR-16-5.10](https://doi.org/10.18374/IJBR-16-5.10)

ABSTRACT

The presence of organized retailing took the entry in KSA nearly more than a decade ago and a speedy growth in this sector has been seen in the region. The development of the food retail industry, especially in the big cities in Saudi Arabia, has leads to the development and growth of the shopping mall and organized retailing sector. Consumers play a very important role in any business to be a successful. Hence, understanding of customer buying behavior will be a great role to the success of supermarkets or hypermarkets. To understand the best customer insight and investigate the issues related to the behavior of consumers towards the services provided by the supermarket / hypermarket in this region a descriptive research with structured questionnaires of 244 Saudi consumers were conducted online and after analysis it was found that buyers having difference opinion towards products availability and price charged by organized retailer during shop.

Keywords: Consumer Behavior, Retail Sector, Consumer Satisfaction, Supermarket, Hypermarket, Saudi Arabia.

1. INTRODUCTION

The KSA customer base comprises locals, who are among the most enthusiastic consumers in the world, and expatriates (more than 30 percent of population), who have a willingness to spend on convenience and shopping products (CIA World Fact book, 2014). A wide range of segments like a high percentage of young population, high disposable income will provide attractive opportunities and focus for the growth of the retail sector. In addition, retail and food industries, including supermarkets and hypermarkets, as a result to encourage the government to support the economy it is now increasingly expanding in Saudi Arabia and it is ranked 14th in 2011 (Shabat et al., 2012).

In addition, Al Kathery (2011) expected that the behavior of Saudi Arabia shoppers different from the claim that so far, 60% of consumers purchased from supermarkets and hypermarkets, about 6% of the purchase of the small shop. Currently, in addition to the rapid growth of online shopping a number of retailers that sell goods and services online and it became the important channel to expand the market locally and internationally (Alam and Elaasi, 2016).

Customer satisfaction is a function of the contrast between the recognition of previous customer expectations and then purchases the same service (Oliver, 1977.1980, Anderson & Sullivan, 1993), it is expected if it is placed on the recognition at the highest level as well. The high value of high customer satisfaction, long-term it is possible to benefit the retail sector, and increase revenues (Zeithaml, Berry, & Parasuraman, 1996; Cronin, Brady, & Hult, 2000; Aaker & Jacobson, 1994). The main challenge of the service industry is the quality of service and customer satisfaction stated by Anderson & Sullivan, 1993; Hong, Huang and Chen, 2003.

Customer satisfaction is the most powerful intangible assets similar to the quality of service, and can be achieved by meeting customer expectations (Oliver, 1980; Boulding, Kalra, Staelin, & Zeithaml, 1993; Bahia, Paulin, & Perrien, 2000; Homburg, Koschate, & Hoyer, 2006; Jayasankaraprasad & Kumar, 2012). If the retailer can evaluate the purchasing behavior and its recognition of the client using the experience in the field of quality retail would enable long-term relationship. Retail companies, for the current customer

loyalty will need to create more of a good quality and better services (Dabholkar, Thorpe, and Rentz, 1996).

2. REVIEW OF LITERATURE

Organized retailing/ supermarket industry has had a significant impact on the overall economy in most countries. McCarthy (1981) indicates that the supermarket has been a self-service, retail markets, and a large store that specializes in food products, in particular, the sale of food and household goods selected. In order to understand the behavior described by Yavas and Secil, 1984. Saudi Arabia in the retail sector, according to (Zawya, 2006), is one of the areas that grow rapidly and new demand for consumer goods. Consumers now prefer to shop at the supermarket modern shops and supermarkets for a variety of reasons. First, to the young people and the public, it has been developed to shop from the Western-style shopping from the supermarket. Second, older people prefer the supermarket because it is convenient. Third, at the supermarket because there is a playground where parents can make it possible to shop while entertainment for children, because of the conservative nature of Saudi society, has been seen as a place for family entertainment (Al Rajhi Capital, 2010).

In addition, Saudi Arabia population, and growth in the context of a culture that is based on religious principles, described in the report, which has been updated. A major source of entertainment that can be culturally acceptable is in the form of shopping and dining at a shopping mall. Retail store that can be assessed in these facilities' sale (hypermarkets and supermarkets) is the perfect place to Saudi Arabia from the family can relax (Al Rajhi Capital, 2013). On the other hand, shop corner of Saudi Arabia about 200,000 restaurants in the store mainly for low-income (Al Kathery, 2011). According to Al-Rajhi and Euro monitor survey, the annual growth rate of corner shop in 2010 by 3.2%, supermarket 4.4%, and was 7.2% hypermarket. And it has been the market share of supermarkets by 16%, and the share of supermarkets is 24%, and finally corner shop because a large numbers that is 60%. (Al Rajhi Capital, 2010).

Customer satisfaction is a function of the contrast between the recognition of previous customer expectations and then purchases the same service (Oliver, 1977, 1980; Anderson & Sullivan, 1993). The fact that more and more high-value customers in the long term and will bring great benefits to regulate the retail trade with the largest revenues (Zeithaml, Berry, & Parasuraman, 1996; Cronin, Brady, & Hult, 2000, Aaker & Jacobson, 1994). Customer satisfaction is the most powerful of intangible assets similar to the quality of service, and can be achieved by meeting customer expectations (Oliver, 1980; Boulding, Kalra, Staelin, & Zeithaml, 1993; Bahia, Paulin, & Perrien, 2000; Homburg, Koschate, & Hoyer, 2006; Jayasankaraprasad & Kumar, 2012). Studies have emphasized the importance of the relationship between quality of service and customer satisfaction (Cronin and Taylor, 1992).

The researchers stressed that the importance of the relationship between quality of service and customer satisfaction, it was also found that satisfaction is a result for the service at the time of the customer experience (Brady & Robertson, 2001; Jayasankaraprasad & Kumar, 2012).. Quality of service and customer satisfaction, while the structure that is different, associated with it (Brady, Cronin, & Brand, 2002; Ranaweera & Neely, 2003). In addition, a causal relationship between the quality of service and customer satisfaction is the major subject of academic debate (Bahia et al., 2000). In one study it was indicated that perceived quality in advance purchase is expected to be recognized to the extent that it does not match with customer satisfaction (Olsen, 2002; Gustafsson, Johnson, & Roos, 2005; Rigopoulou, Chaniotakis, Lymperopoulos, & Siomkos, 2008; Cerri, 2012; Kitapci et al., 2013). According Abu Nar and Alam, 2016; the Saudi Arabian foreign and large population not only go to shop in malls, they also see it an opportunity to socialize.

In several studies, we found that customer satisfaction is an important factor in order to achieve business objectives. Supermarkets, in recent time are trying to develop a new and effective strategy to meet the needs of the consumer. Although much research have been undertaken to determine the success and strength of consumers' attitudes and it's evolving factors to measure the consumer hypermarket shopping behaviour these days. Despite the implementation of many researches inside the region as well as around the world towards the consumer shopping behaviour of hypermarket there is still a call for to

identify and measure the attitudes of the consumer and success factors to achieve the goals the marketer. In fact there are research gaps on attitudes' analysis of consumers and their preferences for shopping hyper / supermarket in the literature and it does not cover yet for deep study. Therefore, the present study is an attempt in this direction. In addition, this paper focuses on customer behaviour touching the practices of supermarket / hypermarket and its related sectors.

2.1: OBJECTIVE OF THE STUDY

The purpose of this study was to investigate the behavior of customers shopping experience super / hypermarket in Saudi Arabia in general and in particular consumers' purchasing attitudes in Saudi Arabia are as follows:

- To investigate the customer experience on the product quality bought from a hypermarket supermarket
- To understand the participants' awareness of information of product maturity
- To be certain that the respondents experience in picking up a faulty product
- To know the participants experience for empty shelves
- To recognize the position on the lack of stock of the product due to seasonal demand
- To understand the respondents shopping attitude towards rival supermarket
- To study the behaviour of participants regarding switch the supermarket when product is no longer available
- To know the feelings about customer satisfaction and price of product charged

3. METHODS

In order to complete the study two phases of investigation had been implemented. In the first phase a pilot study between Saudi Arabia families had been noted. To this end, 26 people of the respondents connect shoppers of men and women feedbacks were taken to know and reduce the error for more (large) investigation.

Amendments were added to the questionnaire in response to the participants of the reactions and the previous version of the questionnaire had been improved. In the second stage (the final version), through the e-mails among 244 Saudi respondents had completed their final study in more than two months. Close ended questionnaire were structured for the survey and the special software, has been used in order to be able to submit only responses by one person from their PC to complete the task.

This was done in order to avoid duplication of results. In addition, special attention has been taken in order to reduce the error of response rate. After collecting the data it was edited on the one hand and then recorded in Excel sheet. For analysis, using descriptive statistics (frequencies) distribution, were applied and the result findings were interpreted to achieve the above objectives, to know the consumer buying trends and their behavior regarding the organized retailing sectors in general and particularly for the Saudi Arabian super/ hypermarkets.

4. RESULTS

Respondents' classification on the basis demographic factors such as gender, education, monthly income and their geographical area where they belong can be seen in the result. Majority of respondents were male 164 (72.25%) and 63 (27.75%) female representing the sample. The Figure 1 shows the educational level of respondents that were master degree holders 97 (43%) at highest representation followed by 67 (30%) holding a bachelor's degree, 17% (39) of respondents having PhD degree, very few had high school / or diploma degree qualification and other educational background.

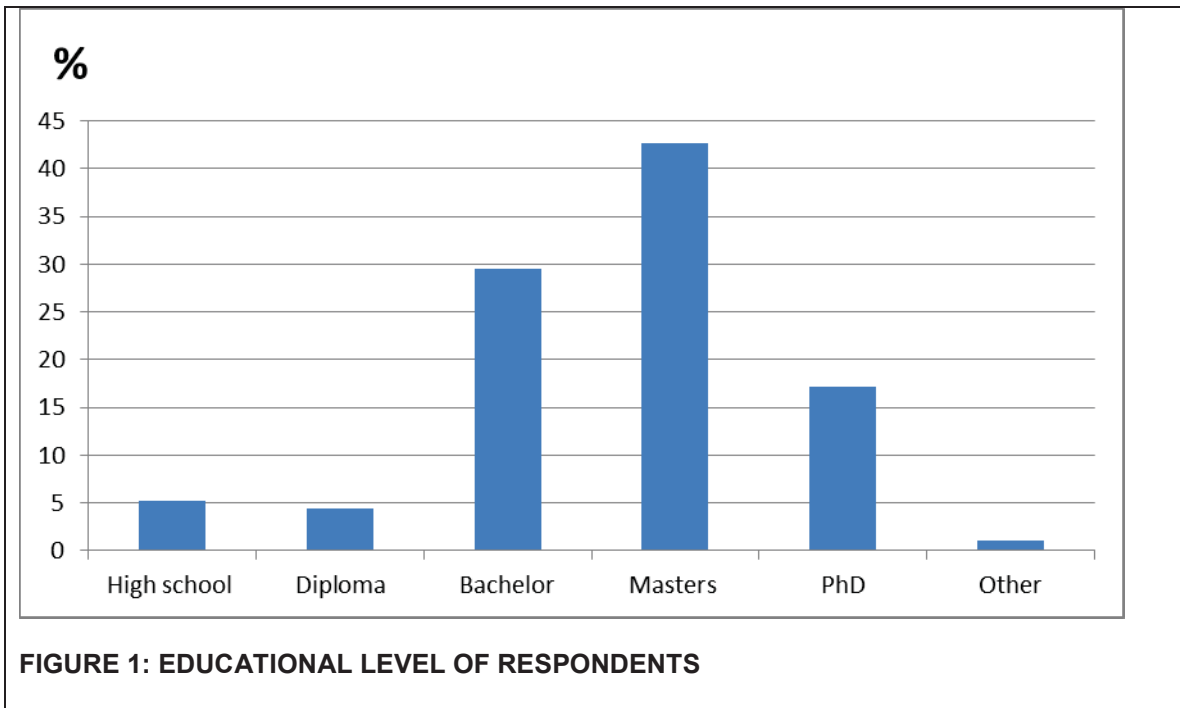


Table: 1 show that the income levels of the participants, more than 60 percent of the participants belongs to the monthly income of less than 10,000 / SR group.

Less than 40 percent of the respondents belong to the monthly SAR 10,000 or more of their monthly income. This means that the majority of the population belongs to the middle-income class.

| TABLE 1: MONTHLY INCOME OF RESPONDENTS | | |
|----------------------------------------|-----|-------|
| Monthly income in SR | N | % |
| Less than 5000 | 35 | 15.42 |
| 6000-8000 | 58 | 25.55 |
| 9000-11000 | 48 | 21.15 |
| 12000-14000 | 38 | 16.74 |
| 15000-17000 | 21 | 9.25 |
| 18000-20000 | 14 | 6.17 |
| More than 20000 | 13 | 5.73 |
| Total | 227 | 100 |

TABLE 2: LOCATION OF RESPONDENTS

| City | N | City | N |
|----------|----|--------------|---|
| Riyadh | 85 | Dahran | 6 |
| Jeddah | 58 | Najran | 1 |
| Madinah | 4 | Jubail | 2 |
| Makkah | 11 | Alhasa | 3 |
| Haffouf | 5 | Safwa | 2 |
| Tabouk | 2 | Hafr Albaten | 1 |
| Abha | 4 | Zulfi | 1 |
| Alkhobar | 9 | Kharg | 5 |
| Dammam | 10 | kateef | 5 |
| Qasim | 10 | Hail | 1 |
| Jazan | 1 | Dawadmy | 1 |

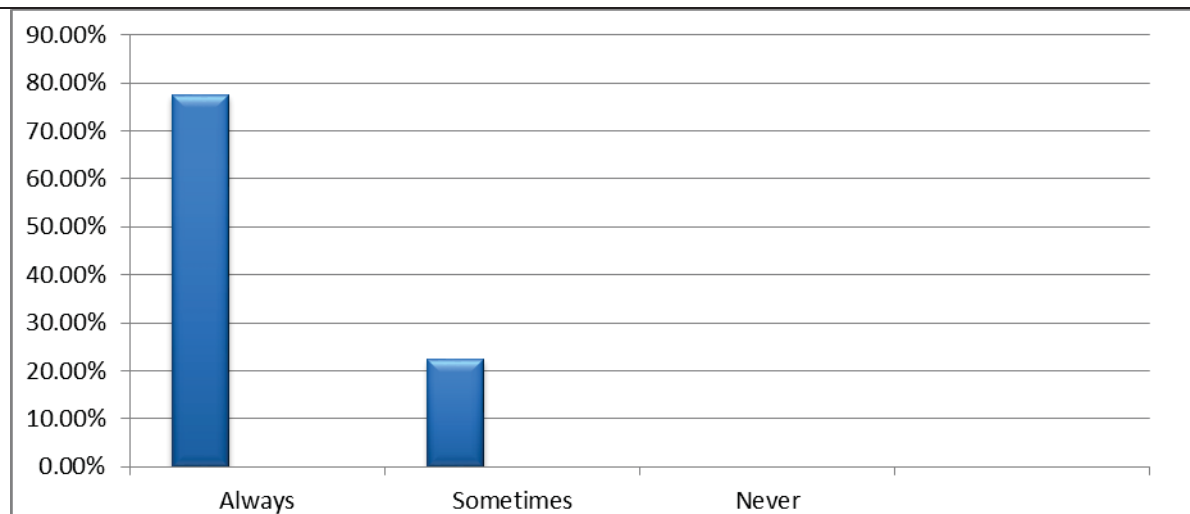
**FIGURE 2: RESPONDENTS ATTITUDE TOWARDS CHECKING OF PRODUCT QUALITY BEFORE PURCHASE**

Table2: show the complete details of the respondents of a place to belong. From this table, it can be seen that most of the participants belong to Jeddah (58) after the capital Riyadh (85) and the other 101 people

belong to the rest of the 22 cities. Each of the city, compared with other cities in the region, have a good representation in the business side.

From the figure 2: it can be analyzed that customers check product quality first and foremost. 78% of respondents always check the quality whilst only 22% only check it occasionally. Also, and continuing with the theme of product awareness, we can look at the issue of expiry date. Furthermore, figure 3 also show that 75% of respondents always check the expiry date, 23% do it sometimes, and only very small number (2%) do not check it at all.

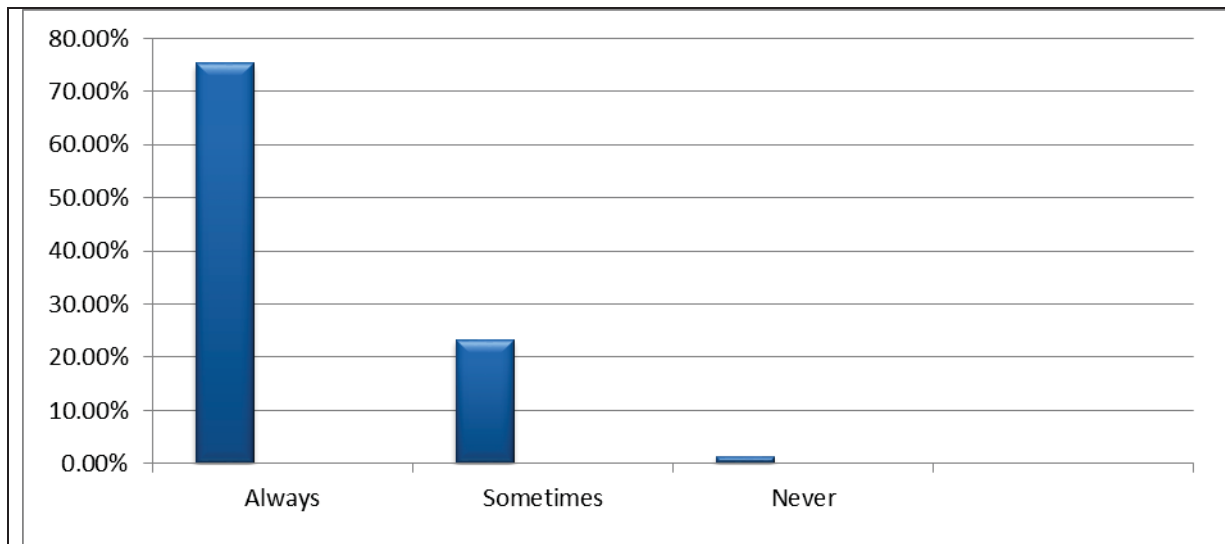


FIGURE 3: RESPONDENTS AWARENESS OF PRODUCT EXPIRY DATE

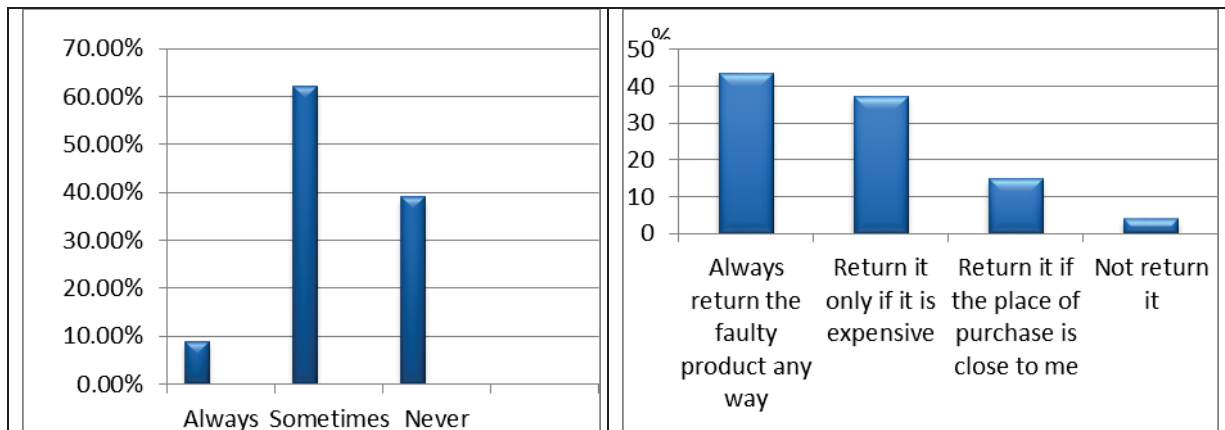


FIGURE 4: RESPONDENT EXPERIENCE IN GETTING FAULTY PRODUCT FROM SUPERMARKETS

FIGURE 5: RESPONDENT ATTITUDE TOWARDS POST PURCHASE AFTER GETTING THE FAULTY PRODUCTS

Figure 4; It can be observed the frequency with which respondents pick up faulty product. Researcher would expect responses to be small. The detailed figures show that 9% have found a faulty product. On

the other hand, 39% have not picked up a faulty product. This result may be considered abnormal as we would expect it to be a lot higher.

When asking them about their reaction on finding a faulty product after buying it, a majority of them reported they would be willing to return the product. Figure 5 show that more than 43% would return the faulty product to the supermarket straight away; and 37% would return it only if it was expensive; and nearly 15 % would return it if the place of purchase was close to their home. Only 4% not return it at all.

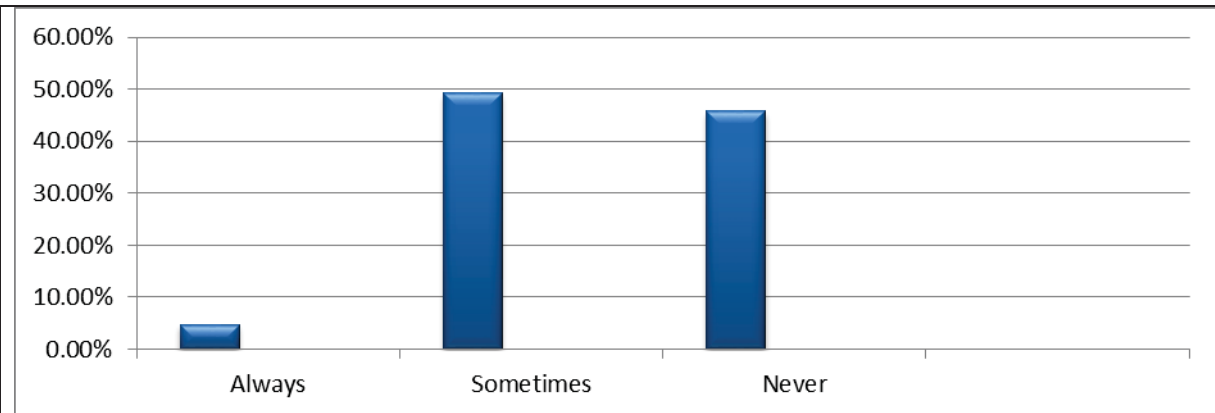


FIGURE 6: RESPONDENT OBSERVATION ON FINDING SHELVES EMPTY IN SUPER MARKETS

Figure 6: show respondent attitudes towards empty shelves. A very small number- less than 5%- have experienced cases where there are too many shelves empty. At the other end of the scale only 45% of respondent have found that shelves are fully stocked to their satisfaction.

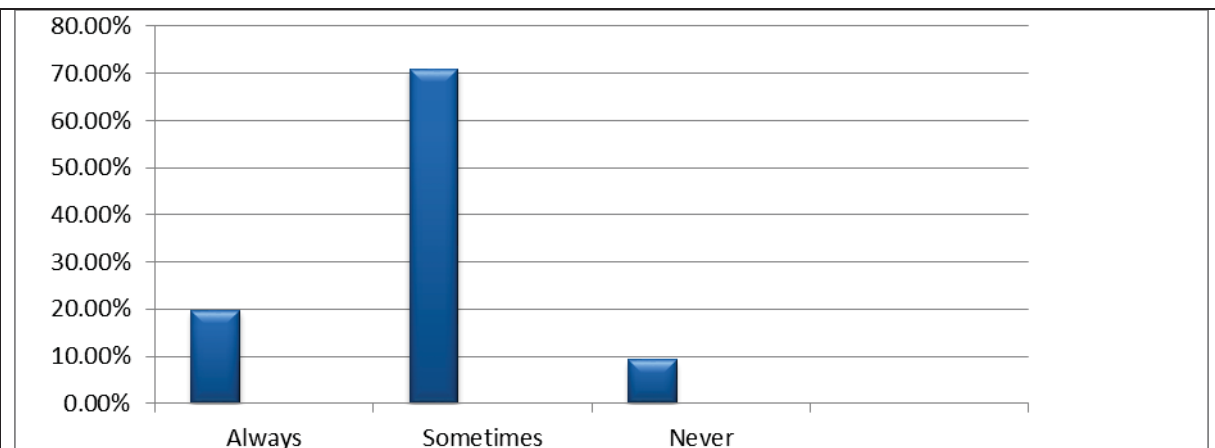


FIGURE 7: RESPONDENTS OPINION ABOUT THE SHORTAGES OF PRODUCT DUE TO HIGH SEASONAL DEMAND

Figure 7: show that shortages can occur at particular times of year. These include religious festivals and the return of children back to school. Over 70% of respondents reported that they sometimes had difficulty in finding the product wanted. Only 9% had not experienced such problems.

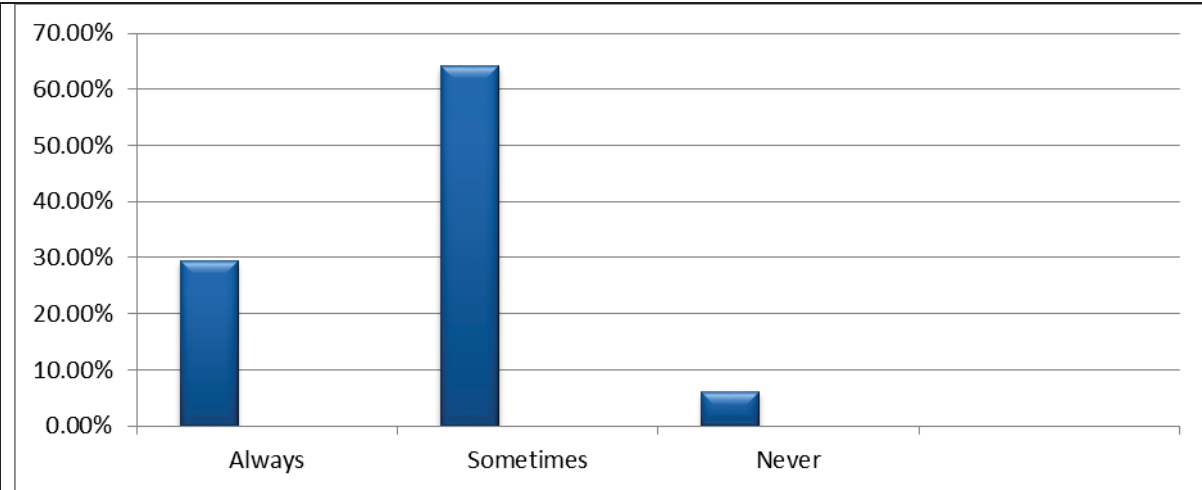


FIGURE 8: RESPONDENT ATTITUDE TOWARDS VISITING OTHER SUPERMARKETS

Figure 8: investigate whether respondents regularly use supermarkets belonging to a rival chain from their regular supermarket. When consumers were asked about shopping elsewhere if they could not find what they wanted at their regular supermarket, nearly 30% said they would always go to competitors; whilst 65% would do it sometimes. Only 5% of customers would refuse to use competitors.

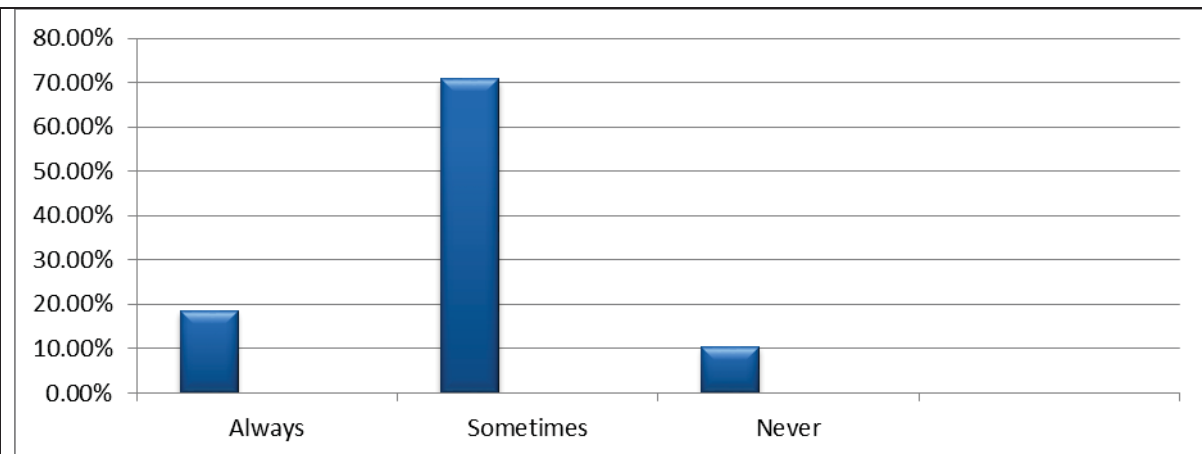


FIGURE 9: RESPONDENTS LIKELIHOOD OF SWITCHING SUPERMARKETS OVER PRODUCT UNAVAILABILITY

In respect of the product availability, most respondents 53% were highly satisfied with their supermarket as they could always find what they wanted (at all times). A further 47% were able to find the product requires sometimes. Figure 9: show that only 22% would do this automatically. 68% would sometimes change whilst only 10% would never do this.

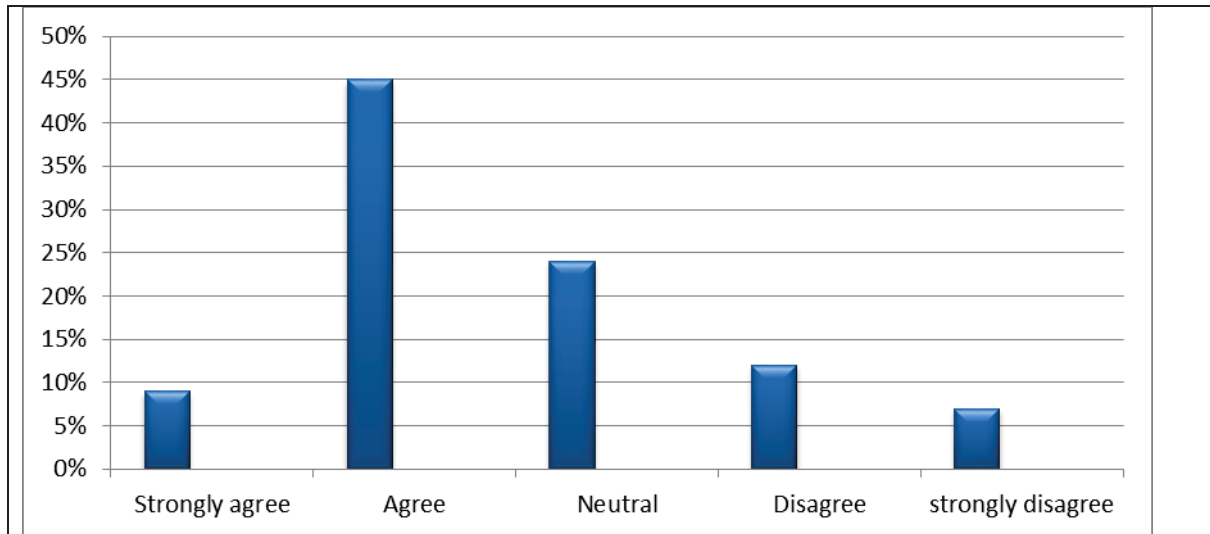


FIGURE 10: RESPONDENT ATTITUDES REGARDING THE PRICE CHARGED BY THE RETAILERS FOR THE PRODUCTS WERE SATISFACTORY

Figure 10: Investigate respondent perception in terms of price satisfaction. This is of course affected by respondent observations of what is reported in the media and from announcements on inflation levels by governmental authorities. The results show that 54% either strongly agree or agree that supermarkets attempt to satisfy the price demands of customers. On the other hand, 19% either strongly disagree/ disagree on the supermarket attempted to provide products at the prices demanded by customers.

5. DISCUSSION AND CONCLUSION:

Organized retail traders in Saudi Arabia are increasing with incredibly swift. Developments in the foodstuff industry have led to expansion of shopping malls, mostly in the big cities of Saudi Arabia. A shopper contributes vital responsibility in any business. Consequently, understanding purchaser buying behaviors towards the sector are significant to achievement of organized retail business.

The result indicates that customers check product quality first and foremost important concern when they consider to buying the products from supermarket/ hypermarket. In addition, respondents always check the expiry date, majority of respondents never experienced in getting the faulty product from the super market and if someone faced this type of problem they usually return the faulty product to the supermarket straight way. It is observed that respondents are fully aware regarding the faulty, damaged and expiry date of products.

Therefore, it can be suggested that marketers should continuous check product damaged, faulty product and expiry date of products to keep the customer satisfy and loyal. Furthermore, most of the time the super market shelves were full of products a very small number- less than 5%- have experienced cases where there were too many shelves been empty. In response to the shortage of products majority of respondents reported that they sometimes had difficulty in finding the product wanted specially it occurs at particular times of year these include religious festivals and the return of children back to school etc.

When consumers were asked about shopping elsewhere if they could not find what they wanted at their regular supermarket, majority explained that they used to visit it sometimes. In addition, respondent perception towards price satisfaction it reveals that majority were strongly agreed or agree that supermarkets attempt to satisfy the price demands of customers on the other hand only very small percentage were insignificantly differenced in their opinion that supermarket attempted to provide

products at the suitable prices. The above result shows that they have very good impression about the availability of products and in relation with price charged by the marketers for needed product they have very positive response.

These results enable to make customer repeat purchase and loyal. From the above results it can be concluded that marketers can have a good chance to get their strong image in consumer mind moreover it is suggested that marketers must keep these perceptions for longer time to deal with better customer relationship and to be a leader in this sector.

LIMITATION OF THE RESEARCH:

While very well attempt have been made to put up for the investigation though the subsequent factors have been unavoidable absent as a result of their critical limiting factors for this study:

- Lack of time and cost
- In this study, it was not possible to cover all dimensions of shopping.
- The sample size was limited because of time and cost.

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A PRELIMINARY THEORY OF ORGANIZATIONAL FOOD CULTURE

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[dx.doi.org/10.18374/IJBR-16-5.11](https://doi.org/10.18374/IJBR-16-5.11)

ABSTRACT

In this paper, we propose a theoretical framework and an empirical construct of organizational food culture. We first conducted a literature review to create a preliminary theoretical framework. Next, we developed a parsimonious empirical construct of organizational food culture and we tested its reliability and construct validity using data collected from the industry. At the end of this research, a two dimension model made up of provision of food and organizational function policy and hierarchical policy was finalized as the preliminary parsimonious construct of organizational food culture.

Keywords: Organizational Culture; Organizational Food Culture; Health

1. INTRODUCTION

Global obesity is becoming worse over the years. This has added weights to global trends such as increasing public health expenditure, increasing number of people affected by obese related diseases (such as diabetes, heart disease and hypertension), and increasing work productivity losses. According to the World Health Organization, about 2.8 million adults died every year due to obesity (Agence France-Presse, 2011). And the costs of work productivity losses and treatments for medical issues such as obesity were estimated to be US\$47 trillion by 2030 (Bloomberg, Associated Press, 2011).

One of the main contributors towards obesity is individual food practice. Given that most adults spend most of their time at work, we propose that organizational context can be an antecedent of employee food practices. In specific, we propose food related organizational policy can influence employee food practices, which will in turn influence the employees' health. If this chain of interactions is valid, organizations can play a role in reducing future public health expenditures and improving the health of employees, while at the same time improving organizational performances. This is not only going to bring the meaning of corporate social responsibility to a new chapter, it is also going to force us to rethink about the role organizations should play in the society. However, hitherto, there is a lack of research on this potential chain of interactions.

We propose an organization's food culture can be studied from four perspectives: provision of food and organizational function policy, time policy, hierarchical policy and accessibility of food policy. In this paper, to provide support for this proposed theoretical framework, we first conducted a literature review. Then, we crafted a 16 items organizational food culture construct, and we collected survey data for these items. Finally, we analyzed the construct's reliability and construct validity using the data.

2. THEORY AND HYPOTHESES

Organizational culture has been defined casually to be "the way we do things here" (Robbins, Bergman, Stagg, & Coulter, 2008). Academically, it refers to be the collection of the values, beliefs and norms of an organization's employees, and an organization's practices and policies (Hofstede 1998; Ng & Ng, 2014). Organizational food culture concerns food related organizational activities. It can be observed at three different levels: the policy level, the norm level, and the individual level. The policy level refers to the formal food policies adopted by organizations. The norm level refers to the collective food practices of employees, such as having lunch together (Thomson & Hassenkamp, 2008). And the individual level

refers to the dietary patterns of individual employees and the type of people they tend to spend their meals with. The focus of the current exploratory research is on the policy level.

2.1 Provision of food and organizational function policy

Food provision refers to the employing organization subsidizing or paying for food items consumed by employees, and, in this paper, organizational function refers to formal organizational events involving food.

Organizations hold different functions on a regular basis for different purposes. For example, rituals to improve the bonds between employees (Thomson & Hassenkamp, 2008) and ad hoc ceremonies to celebrate significant events (Harris, 1994). Such organizational functions are likely to influence employee food practices and, depending on an organization's internal characteristics, the actual impact of this influence in different organizations is likely to be different. For example, in an organization where some employees have special medical needs, the variety of food provided has to accommodate such needs (Buckley, Denton, Robb, & Spencer, 2006). Other than organizational functions, food is also used in organizations for networking purposes. For example, to build new relationships with their colleagues or to strengthen the bonds they have (Driver, 2008; Flores-Pereria, Davel, & Cavedon, 2008), or to wine and dine with the clients to win business deals (Cunha, Cabral-Cardoso, & Clegg, 2008).

2.2 Time policy

By time policy, we refer to the length and flexibility of time an organization allows its employees to have for breaks. Alternatively, one may also call it meal time policy. Organizations have different meal time policies. For example, while one or multiple fixed time slots for breaks may be mandated by some organizations, others may allow its employees to freely choose their breaks without similar restrictions. The implementation of such different time policies in organizations is likely to give rise to different organizational food cultures.

First, an organization's time policy will influence the amount of time that a person has to consume his/her meals (after discounting time for travelling). When the time available for meals is not long enough, it may cause an individual to eat faster than their usual speed of eating. This may cause a person to eat more than their usual portions (Singh et al. 2008), a form of unhealthy individual food practice. Second, an organization's time policy will influence the type of food a person is more likely to choose to eat during breaks. The nature of the influence of this effect depends on the environmental context that the person works in.

For example, if a person works in a place surrounded by fast food restaurants, a shorter time policy will likely cause that person to have a higher tendency to eat in fast food restaurants. Third, the time policy will influence whether employees can choose to go for breaks together. As meals with more people will tend to take longer (De Castro, 2000) and tend to increase the variety and amount of food items that may appear during a meal and be shared among employees, the time policy is likely to influence an employee's health via its influence on the quantity of food that is usually consumed by that person (Wansink, 2004). Finally, it was reported that the frequency of meals that a person consumes throughout a day was found to be inversely associated with the probability of the person overeating (Gatenby, 1997). Hence, if an organization can implement multiple, but short, breaks, this may result in healthier individual food practices.

2.3 Hierarchical policy

Hierarchy refers to the system of how power and status are allocated to employees in an organization and how they are treated differentially (Harris & Raviv, 2002). Hierarchical policy refers to organizational policy that gives different food related privileges to employees of different ranks. For example, features such as an executive dining room or dedicated eating space may be provided to distinguish people who are higher up in the organization's hierarchy from the other employees (Cunha et al., 2008), and personal chefs may also be allocated to employees on the higher tier of an organization's hierarchy. In addition, related to the food provision and organizational function policy, as employees of higher rank will usually need to entertain clients who are also at the higher end of their organization's hierarchy, a bigger budget may be allocated to them to treat their clients to meals.

2.4 Accessibility of food policy

Accessibility of food refers to employees' proximity to food vendors and their ease of acquiring food. It is influenced by several organizational policies. For example, it can be influenced by an organization's decision on the location of their offices (Delios & Beamish, 2004). Other than an organization's physical location choice, organizations can influence their employees' accessibility to food via two other types of policies: those related to the running of an organization's "in-house canteen", and those related to vending machine placements in the organization's physical compound. For organizations that have on-the-site cafeteria, it can influence the food practices of its employees via its cafeteria management policy, such as the requiring of all food vendors to display the nutritional information of their food (Glanz & Mullis, 1988). For organizations that have vending machines, the choice of the types of food that these machines sell can also be used to influence employees' food practices (Wansink, 2004).

The main assumption of this section's discussion is different organizations have different organizational food cultures. This is in-line with one of the key thoughts of culture research literature – although there are similarities between cultures, it is not really possible for two to be identical. Summarizing our discussion in this section, we propose:

Proposition 1: *The food provision and organizational function policy of an organization is a part of its organizational food culture.*

Proposition 2: *The time policy of an organization is a part of its organizational food culture.*

Proposition 3: *The hierarchical policy of an organization is a part of its organizational food culture.*

Proposition 4: *The accessibility of food policy of an organization is a part of its organizational food culture.*

3. METHODOLOGY

A mixture of purposive sampling method and snowball sampling method was used to collect survey data for the current research. First, several contacts were invited via means such as emails, phone messages, phone calls, etc. These contact persons included individuals such as human resource personnel of organizations, employees of organizations, managers or owners of organizations, etc. These contact persons were briefed on the nature of the research, invited to take part in the survey, and to help forwarding the invitation to other eligible personnel.

The survey used in this research was made up of two main parts. One part of the survey was made up of four demographic questions for descriptive purposes: gender, age, industry and number of years in the current organization. Respondents indicated their gender on a two-point nominal scale (1 = male and 2 = female), their age on a 5-point categorical scale (1 = 20 and below, 2 = 21-30, 3 = 31-40, 4 = 41-50 and 5 = 51 and above), their industry in an open-ended question, and their number of years in their working organization in an open-ended question. The other part of the survey was made up of sixteen questions on food-related organizational policies. These questions were developed based on the literature reviewed. Participants ranked their answers on a 5-point Likert scale for each of these questions (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree and 5 = strongly agree). The following 16 questions were used to operationalize the four dimensions of organizational food culture, and their order was mixed up randomly before they were administered on the respondents:

- i) Provision of food and organizational function policy
 - Events are celebrated at my organization with generous portions of food and drink. (Question 5, Q5)
 - Business contracts and connections are made while eating and drinking in my organization. (Question 6, Q6)
 - In my organization, business issues are often discussed over the dining table. (Question 8, Q8)
 - In my company, we frequently celebrate successes with lunch or dinner parties. (Question 10, Q10)

- In my company, we “wine and dine” our customers regularly. (Question 18, Q18)
- ii) Accessibility of food policy
 - There are food vending machines near the place I work. (Question 9, Q9)
 - Many external food sellers are located near my workplace. (Question 11, Q11)
 - There is a pantry in my workplace for employee use. (Question 15, Q15)
- iii) Hierarchical policy
 - My organization provides different foods for people holding different official positions. (Question 13, Q13)
 - Business meal reimbursement scheme is different according to an employee’s status in the organization. (Question 14, Q14)
 - There are dining places in my organization exclusively for managers and/or executives. (Question 19, Q19)
- iv) Time policy
 - People have fixed schedules for meals in my workplace. (Question 7, Q7)
 - Employees of my organization tend to take very short breaks for lunch. (Question 12, Q12)
 - People working here spend little time to eat. (Question 16, Q16)
 - People in my organization often eat without stopping their work. (Question 17, Q17)
 - At my workplace, employees can decide by themselves when to take the lunch break or coffee breaks. (Question 20, Q20)

3.1 Analytical method used

The aim of this part of the research was to propose and test a preliminary parsimonious construct of organizational food culture. Towards this end, we need to ensure that this construct has good reliability and sound construct validity. For reliability, we tested for the relevant Cronbach’s Alpha figures. For construct validity, we need to know whether the data fit the proposed factorial constructs well (Nunnally & Bernstein, 1994). Given that the proposed organizational food culture construct was supported by the literature, we conducted confirmatory factor analysis with Lisrel using structural equation modelling on the data to test for the model’s construct validity (Nunnally & Bernstein, 1994).

3.2 Characteristics of respondents

A total of 31 contact persons were contacted, and 223 completed surveys were collected. Amongst the 31 contact persons contacted, 20 of them were willing to take part in the survey, and 15 were willing to help invite other eligible personnel. Amongst the 223 respondents, 117 of them were males, 101 were females, and five chose to not indicate their gender. 78 of them were 30 year old and below, 78 of them were in the range of 31-40 year old, and the rest were 41 or above. The mean of the number of years that our respondents had worked in their organizations was 8.17 years. They came from many different industries. For example, education, food and beverage, service, security, and public service.

3.3 Analyses

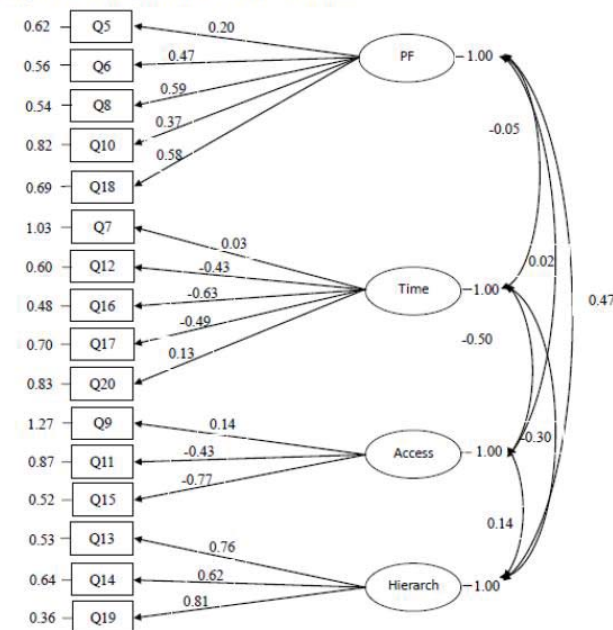
The means, standard deviations and correlations of the 16 organizational food culture items are shown in Table 1. We first calculated the Cronbach’s alpha of each proposed dimensions. The Cronbach’s alphas of the provision of food and organizational function policy dimension, time policy dimension, hierarchical policy dimension and accessibility of food dimension were calculated to be 0.60, 0.23, 0.76 and 0.17 respectively. That is, although the provision of food and organizational function policy dimension and hierarchical policy dimension were found to be relatively reliable (Chua, 2013), the other two dimensions were not. We are aware that some authors might argue that a Cronbach’s Alpha figure which is greater than 0.8 or even 0.9 would be preferable. However, high Cronbach’s Alpha figure is usually obtained by the use of mature measurement items or scales that have many items loaded onto a dimension (Gardner, de Bruuijin & Lally, 2012). Given the exploratory nature of our parsimonious scale, it is more likely for Cronbach’s Alpha figures around 0.6 or 0.7 to be achieved.

Next, given that these four dimensions were proposed to be parts of organizational food culture, they should be able to produce a reliable composite variable when they are all treated as indicators of a single composite variable “organizational food culture”. Nevertheless, as items from the time policy dimension and accessibility of food policy dimension were not found to be reliable, we anticipated that a two

dimension organizational food culture model would be more reliable than a four dimension organizational food culture model. To test for this, we first calculated the Cronbach's alpha of the four dimension model. The Cronbach's alpha for this model was found to be 0.60. Next, we calculated the Cronbach's alpha of the two dimension model. As anticipated, the Cronbach's alpha of this model increased to 0.69, indicating that the two dimension model was a much more reliable construct. Hence, in terms of reliability, while Proposition 1 and Proposition 3 were supported by the data, Proposition 2 and Proposition 4 were not supported by the data.

Next, a confirmatory factor analysis was performed using LISREL (see Figure 1). Interestingly, it was observed that the dimension of time policy was the only dimension that correlated negatively with the other three dimensions. The other dimensions correlated with each other positively.

Figure 1: CFA Analysis Outcome for 4 Factors Model

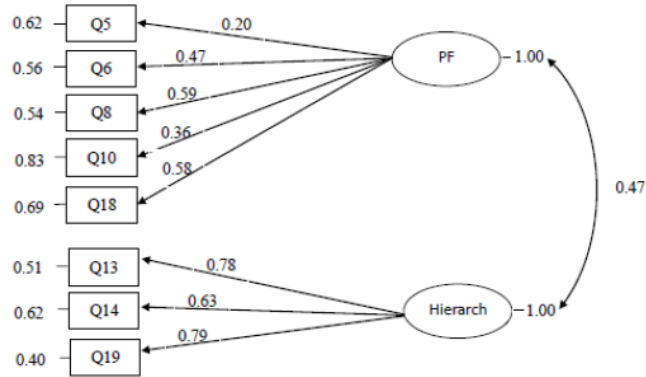


Access, accessibility of food policy; Hierarch, hierarchical policy; PF, provision of food and organizational function policy; Q, question; Time, time policy.

The minimum fit function χ^2 of the model was 270.06, normal theory weighted least square χ^2 was 262.38, the model AIC was 338.38, the root mean square error of approximation (RMSEA) was 0.09, the standardized root mean square residual (SRMR) was 0.10, the normed fit index (NFI) was 0.68, the non-normed fit index (NNFI) was 0.71, the comparative fit index (CFI) was 0.76, the incremental fit index (IFI) was 0.77, the goodness-of-fit index (GFI) was 0.87, and the adjusted goodness-of-fit index (AGFI) was 0.82.

In consideration of the improvements made in the reliability of the proposed organizational food culture construct after we dropped the time policy dimension and accessibility of food policy dimension, we suspected that the construct validity of the proposed construct would also improve after these two low reliability dimensions are dropped from the confirmatory factor analysis. Hence, another confirmatory factor analysis was conducted to test whether the proposed construct would have better fit if the two less reliable dimensions are dropped from the model (see Figure 2).

Figure 2: CFA Analysis Outcome for 2 Factors Model



Hierarch, hierarchical policy; PF, provision of food and organizational function policy; Q, question.

In line with the earlier findings, the goodness-of-fit statistics of the model improved significantly after the removal of the two less reliable dimensions. The minimum fit function χ^2 of the model was 64.43, normal theory weighted least square χ^2 was 69.96, the model AIC was 103.96, RMSEA of the model was 0.11, the SRMR was 0.08, the NFI was 0.85, and the NNFI was 0.84. The CFI of the model was 0.89, the IFI was 0.89, the GFI was 0.93, and the AGFI was 0.86. Although the RMSEA and SRMR figures of the model's goodness-of-fit statistics were still around 0.10, the NFI, NNFI, CFI, IFI, GFI and AGFI figures improved to figures that were around 0.90. The minimum fit function χ^2 , normal theory weighted least square χ^2 and model AIC figures also improved a lot. These improvements indicated that the two dimension model had a much better fit than the four dimension model (Mount, Ilies, & Johnson, 2006). As the proposed construct was more valid and reliable without the presence of the dimensions of time policy and accessibility of food policy, Proposition 1 and Proposition 3 were supported by the findings of this research, while Proposition 2 and Proposition 4 were not supported by the findings (Mount et al., 2006).

Table 1: Correlations of all 16 organizational food culture questions

| | Mean | s.d. | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 | Q20 |
|-----|------|-------|-------------------|-------------------|---------|---------|-------------------|--------|---------|---------|---------|---------|----------|---------|--------|---------|-------|-----|
| Q5 | 3.44 | 0.815 | 1 | | | | | | | | | | | | | | | |
| Q6 | 3.1 | 0.886 | 0.28*** | 1 | | | | | | | | | | | | | | |
| Q7 | 3.16 | 1.019 | 0.07 | 0.13* | 1 | | | | | | | | | | | | | |
| Q8 | 2.95 | 0.947 | 0.13 [#] | 0.37*** | 0.16* | 1 | | | | | | | | | | | | |
| Q9 | 3.06 | 1.138 | 0.06 | 0.03 | 0.18** | 0.05 | 1 | | | | | | | | | | | |
| Q10 | 3.35 | 0.982 | 0.27*** | 0.28*** | 0.16* | 0.22** | 0.16* | 1 | | | | | | | | | | |
| Q11 | 3.56 | 1.029 | 0.17* | -0.04 | 0.05 | -0.23** | -0.01 | 0.10 | 1 | | | | | | | | | |
| Q12 | 3.23 | 0.884 | -0.08 | -0.05 | -0.05 | 0.04 | -0.05 | -0.06 | -0.09 | 1 | | | | | | | | |
| Q13 | 2.61 | 1.057 | -0.04 | 0.12 [#] | 0.22** | 0.22** | 0.22** | -0.004 | -0.10 | 0.13* | 1 | | | | | | | |
| Q14 | 2.84 | 1.015 | 0.12 [#] | 0.12 [#] | 0.15* | 0.18** | 0.25*** | 0.004 | -0.01 | -0.07 | 0.46*** | 1 | | | | | | |
| Q15 | 3.62 | 1.056 | 0.16* | 0.06 | -0.004 | -0.08 | -0.09 | 0.15* | 0.31*** | -0.20** | -0.05 | -0.03 | 1 | | | | | |
| Q16 | 3.03 | 0.937 | -0.07 | 0.01 | 0.02 | 0.02 | 0.03 | -0.04 | -0.14* | 0.39*** | 0.03 | 0.10 | -0.16* | 1 | | | | |
| Q17 | 2.81 | 0.97 | -0.16* | 0.12 [#] | -0.15* | 0.10 | 0.18** | -0.06 | -0.09 | 0.15* | 0.15* | 0.09 | -0.27*** | 0.34*** | 1 | | | |
| Q18 | 2.65 | 1.017 | 0.01 | 0.24*** | 0.24*** | 0.35*** | 0.13 [#] | 0.19** | -0.14* | -0.06 | 0.32*** | 0.32*** | 0.01 | 0.11 | 0.14* | 1 | | |
| Q19 | 2.54 | 1.012 | -0.02 | 0.07 | 0.22** | 0.21** | 0.26*** | 0.02 | -0.09 | 0.13* | 0.58*** | 0.48*** | -0.05 | 0.21** | 0.22** | 0.43*** | 1 | |
| Q20 | 3.34 | 0.92 | 0.14* | 0.10 | -0.01 | 0.06 | -0.05 | 0.21** | 0.16* | 0.07 | -0.04 | -0.16* | 0.21** | -0.10 | -0.06 | 0.09 | -0.01 | 1 |

p < .10

* p < .05

** p < .01

*** p < .001

4. GENERAL DISCUSSION

There has been a lack of research focusing on the effect of organizational food cultures on individual food practices, and the effect of organizational food cultures on individual health and organizational performance. To start the ball rolling, this paper contributed a preliminary theory and a parsimonious construct of organizational food culture. Although this model is unlikely to be complete, given its preliminary status, it should serve as a good basis for future research.

Given that provision of food and organizational function policy and hierarchical policy are two valid and reliable dimensions of organizational food culture, organizations may be characterized by its scores on these two dimensions. Organizational food culture is a subset of an organization's culture. Hence, it should behave as per other cultural measures: the score of an organization on a dimension reflects its relative emphasis, or lack of emphasis, on policies that are reflected by the dimension. We propose when an organization's score on a certain food culture dimension is strong, it is a clear indication of the organization's emphasis on the associated policies, and such emphasis will contribute to its strategic effectiveness.

From a social identity perspective, Bartel and Wiesenfeld (2013) proposed that when prototype clarity is present, group prototypes serve as a clear and consensual code of behavior. Such clarity will contribute positively to a group's member coordination and efficient resource allocation, which will concomitantly contribute toward the group's strategic effectiveness. We propose when an organization has a high score on a certain food culture dimension, it signals that the associated food policies are a part of the organization's prototype. To the extent that the organization's food policy contributes to its employees' health and organizational performance, such clear group prototypes should contribute positively to the organization's strategic effectiveness.

4.1 Limitations and future directions of research

First, this research is only an exploratory basic research. Although we have proposed a framework for organizational food culture research, this research does not say much about its potential effect on employee health and organizational performance. Such applied research should be carried out in the future by researchers from the various related fields. We anticipate that cross-disciplinary teams will be required for such research (such as one that is made up of business researchers, practitioners and medical researchers), and we are still far from getting the full picture of organizational food culture.

Second, although we know that environmental factors influence individual food practices, and that such food practices will in turn influence individual health, we are not as sure in the present moment about the effect that organizational food policies might have on individual food practices and individual health. For example, will a certain hierarchical policy be more effective in bringing about positive changes in comparison to another hierarchical policy? Will there be an interactive effect if a certain set of policies are implemented simultaneously? These are just some of the many questions future research can look into.

4.2 Implications of research

First, work-life balance is a hot topic in the industry. One issue frequently mentioned by the practitioners is that work and life are at the two ends of a continuum: if you work harder, then the organization gains and you lose out; if you work less hard, then the organization loses out and you gain. Hence, a balance between work and life is required to make it fair to both the employer and employee. However, implied in this research is one of the potential ways a win-win situation in which both parties can gain some benefits can be achieved via the use of organizational food policy. For example, an organization can implement a series of organizational food policies to improve the health of its employees. This will definitely contribute to the welfare of employees. When the employees' health is improved, it is likely that the organization will also receive benefits such as decreased health insurance costs, lower absenteeism rate, and better employee performance. This may bring the meaning of corporate social responsibility to a new chapter.

Second, organizations can potentially attract and retain talents using their organizational food culture. This may give the company an edge when it comes to the competition for talents. However, it is not clear yet at this point in time how organizations can fine tune such policies to attract specific types of desired

talents. Third, we believe a set of properly implemented food policies should have motivational effects on the employees. However, how should such food policies look like in reality? What should an organization do to make sure that such food benefits will not be taken as entitlements? These are some of the interesting questions that future research can touch on.

5. CONCLUSION

We started this research with the humble aim of wanting to inform the scientific community about the potentials that organizational food culture research holds, and to provide adequate ground-works for future research. Towards this end, we believe we have done our job decently. However, we are still far from getting the full picture of organizational food culture. More basic research can be conducted to add more dimensions to the current theoretical construct, and more applied studies definitely have to be conducted.

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ACKNOWLEDGEMENT

We thank Dr Keith Yong Ngee Ng for his guidance in the conducting of this research. This research is supported by the Fundamental Research Funds for the Central Universities (Grant No. NR2015063; 1009-YAH15053); and the Ministry of Education Humanities and Social Science Research Youth Fund (Grant No., 15YJC630122).

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