ADVANCES IN BUSINESS-RELATED SCIENTIFIC RESEARCH JOURNAL (ABSRJ)

Volume 11, Number 1 (2020)

ISSN 1855-931X

THE IMPORTANCE OF ORGANIZATIONAL CULTURE FOR MANAGEMENT OF CHANGES IN A PUBLIC ENTERPRISE

Mislav Ante Omazić
University of Zagreb, Croatia
momazic@net.efzg.hr

Damir Mihanović*
University North, Croatia
damir.mihanovic@unin.hr

Adriana Sopta
INA, Croatia
asopta@gmail.com

Abstract

This paper refers to recognition of the specific organizational structure in a public enterprise, where the existing organizational culture is compared with the ideal culture, i.e., the culture that should support the achievement of strategic goals. The differences between the existing and the ideal organizational culture and their correlation were verified. The results show a statistically significant difference between the existing and the ideal culture, i.e., they show that there are statistically significant deviations among them. Apart from the comparison of the overlapping and deviations between the existing and desired (ideal) culture, the basic values/motives were analyzed on a sample of respondents who determine and implement the strategy of the organization. In order to clarify the changes that should occur in order to bring the existing organizational culture closer to the ideal, the dominant values were checked. It is interesting to see that the existing values of strategic managers are somewhat in line with the cultural ideal that the organization desires, but are not fully expressed in order that is expected to realize the desired changes in culture as well in strategic achievements.

Key Words

Organizational culture; change management; organizational values, personal values.

*Corresponding Author

INTRODUCTION

In this paper, on the example of a 100% state-owned public company, the assumptions of changes implementation that the organization must take to be more successful in the realization of strategic goals in a liberalized market are analyzed. The assumption of the change relate primarily to the adaptation of the organizational culture recognized by the concerned organization as its competitive advantage compared to other competitors in a relatively complex and turbulet market.

The results of this paper can be the guideline to other similar organizations that aim to manage change systematically and to work on the development of their organizational culture or to those organizations that want to start the change with the strategic elements and gradually step down to operational ones. Considering the fact that this paper deals with the analysis of dominant values among strategic managers, the obtained results can help organizations to look at the behavior that is synchronized with culture and triggers or slows down the desired changes. In other words, the presented results can give an example to other organizations how to manage the development and adaptation of organizational culture in order to achieve the strategic goals and to fulfill the mision to make the organization as close as possible to its business vision.

The influence of organizational culture on behavior is bilateral; the culture that also appears as a cause and as a consequence of behavior ina n organization; it determines the overall success and development of the organization; it directs the decisions and behavior of management and employees: it enables the realization of the vision; encourages organizational development and directs individual, group and organizational synergy. All the above mentioned is contributing to the fact that the organizational culture is the strongest and largest orgnizational control system. Describing its importance for modern organization, Peter Drucker has allegedly stated that organizational cultura „has a strategy for breakfast“ and „structure for lunch“ (Bryant, 2014). Equally, organizational culture is an extremely powerful tool for management of change. As the organization changes and develops over time, there is also a need for changes in organizational culture. In changing and adapting, the organization faces two fundamental challenges, on the one hand to include an individual into an effective whole, and on the other hand to adapt successfully to the changes in the environment. Without the adjustment of the organizational culture to the changes in the environment, there is no survival of the organization, nor the individual in the organization. Status quo in the modern market does not exist, when the organization wants to remain static it de facto challenges the future of its own existence (van Duinkerken, Kaspar, 2015).

Accepting the need to change the way of work, but also the way of thinking about how to achieve strategic goals at different hierarchical levels can occur at different time points. In order to make changes happen, the belief in success and affort in undertaking activities that lead to success should happen simultaneously in management of all levels as well as employees of all organizational units. This changes should provide an organizational

culture, but also the same or similar attitude toward values that should be aligned with the organization and its strategy.

The theoretical background for this paper is based on Schein (2017) understanding of organizational culture, it also includes the construct of values, which is partly included in this paper, and is focused on measuring the most common behavior of people while doing their jobs, since organizational culture is most commonly understood as the way people work in an organization (Deal, Kennedy, 1982; Sušanj, 2005).

ORGANIZATIONAL CULTURE

Each organization creates a unique organizational culture (Firsirotu, Allaire, 1984; Parker, 2010; Denison and assoc., 2012; Bhattacharyya, 2015; Schein, 2017; Shermon, 2017). Equally, there is no unified, universal definition of organizational culture, often organizational culture is described from the perspective of social context and pattern. However, organizational culture is most often seen as something that an organisation *is*, and not as something it *has* (Smirchich, 1983). The first modern definition of culture is that of Edward Tyler from year 1871, where culture is described as a whole complex that includes knowledge, beliefs, art, morals, laws, customs and all other abilities and habits which human has acquired as a member of society (Lowie, 1917). Geertz (1973 according Sušanj, 2005) defines organizational culture as the way of thinking in an organization, Deal, Kennedy (1982 according Sušanj, 2005) defines it briefly as the way of working in an arganization. Rosauer (2015) defines organizational culture as a phenomenon, or an extremely complex and often unpredictable result from a mixture of three simple ingredients: employee, job and client. Hofsted definition in year 1991 defines organizational culture as a collective programming of consciousness that differentiates members of one organization from the other and comperes organizational culture with the organizations mind software (Hofstede, 1991; Sušanj, 2005). According Vrančić (2015), organizational culture makes a distinction between organizations dealing with the same or similar activity, and its strenght is reflected in insufficiently successful attempts at merging companies due to differences in organizational cultures. Sikavica and associates (2008) mention that the culture is a relatively durable and specific system of fundamental values, beliefs and common understandings, norms and customs, which determine the organizational behavior, opinion and directs all activities of the individual and groups which comprise it. Ravasi and Schultz (2006) describe orgaizational culture as a system of shared assumptions that lead what is happening in the organization, determining acceptable behaviors in different situations. That describes the power of organizational culture through term durability and stability, pointing out how cultural changes can be a long-lasting and demanding process, but necessary if a given organization adjusts its strategy to market demands.

Since this paper is largely based on Scheins understanding of organizational culture, it is important to emphasize the way he sees the organizational culture from two perspectives of organizational profession and content (Schein, 2017). He dynamically defines organizational culture as an accomulated and shared learning about the way in which the group addresses the problem of external adapation and internal integration that has been proven in reality and works well and is passed on to the new members as the correct way in which the organization understands, thinks, feels and behaves during the problem solving (Schein, 2017). In this sense, organizational culture represents the basic value assumptions shared by members of the organization as the form how to behave and how to make business decisions.

From the perspective of an individual, despite the relavant experience for a particular job, in a situation where the employer is changed, it takes time for an individual to „fit in“ the organizational culture. „Fitting“ into organizational culture is often more important (though informal and unconscious) reason for hierarchical promotion within the organization (even more important then the results that an individual achieves or from the estimated potential for a new position), and the individual feeling of incompatibility with the organizational culture is one of the most important reasons for thinking about changing the organization (Vrančić, 2015). We fin din the literature several types of organizational culture (Firsirotu, Allaire, 1984; Denison, Spreitzer, 1991; Schein, 2017) and the typologies and names of particular types of culture are based on flexibility or staticity in relation to the market adjustment and the focus o fan organization that can be internal and external – Two-dimensional typology (Sikavica et al., 2008); degree of formalities and degree of centralization – Handys tipology (Kimberly, Quinn, 1985); tendency of the organization toward continuity (stability) or change associated with the level of organizations development and evolution as well internal situation of an organization that implies a way of making decisions and solving problems, and finally, the attitude of the organization toward environment - Scholtz typology (Žugaj et al., 2004). Within all typologies and the mentioned dimensions, it is possible to distinguish between several types of culture that are even somewhat similar and very similar by name.

In cultures in which it is important to respond to the market needs quickly and where the focus on the needs of customers, consumers and clients is important, organizations recognize what exactly leads to success. In this case this is risk taking, quick decision making, experimentation and creativity. In the literature, such an organizational culture is called an entereeurial culture or so called ad hoc creation, i.e., culture of adaptibility and consistence – hierarchical culture, characterized by maintaining stability and inner focus. The value is – respecting the rules and prudence, metodical, rational and obedient way of doing things will be rewarded. Behavior is governed by rules and procedures, and coordination is achieved through hierarchical relationships. In order to maintain stability, employees have clear tasks, responsibilities and powers. When in the management of the organization focus is on the participation and engagement of employees in order to meet the needs of the environment as quickly as possible, such

an organization is characterized by a caring family atmosphere. Management of employees avoids status differences, emphasizes the value of cooperation and teamwork, it is a culture of engagement and involvement or so called clan culture.

Key features of this organizational culture are loyalty, personal devotion to the company, tradition, employees have a strong sense of identification with the organization (Sikavica et al., 2008).

When organizations face a large number of competitors and when they are successful, they probably have developed so-called culture of achievement, that is, a market culture that implies a high strategic focus on the external environment while maintaining stability. Market-oriented cultures survive nurturing values such as competition, focus on results, personal initiatives and proactivity, but also aggressiveness, readiness for hard and long work to achieve high results. They are focused on strong competitiveness and profit where emphasis is on winning. It is important to point out that organizations with only one type of culture rarely exist in practice. The existence of some dominant culture is more frequent, but other cultures are also represented to some extent, there also may be several combinations (culture of adaptibility and culture of involvement and engagement or market culture and culture of adaptibility).

This paper is based on the typology developed by Human Synergetics and which organizational culture perceives through three basic cultural styles, each has four substyles of culture (Human Synergetics, 2011):

1. constructive styles (styles that promote content-oriented behavior, culture of achievement, self-actualizing, humanist-encouraging and culture of sociability),
2. passive defensive styles (styles that promote behavior oriented to avoid conflict and to follow the culture acceptable rules, conventional culture, dependent culture and the culture of avoidance) and
3. aggressive defensive styles (styles that promote behavior oriented on task/security –opposition culture, culture of power, culture of competition, culture of perfectionalism).

Regerdless of typology, to understand organizational culture it is important to take into consideration the two key dimensions of culture, the intensity (strenght) of culture and content as well as orientation clerified by Competing Values Framework theory (CVF) (Quinn, Rahrbaugh, 1983), but also its functionality (Kotter, Heskett, 1992). The intensity of culture implies the understanding, clarity and cohesion of the value system. Clear value system means that the message about expected behaviors sent to everyone in the organization is clear. When it comes to functional culture, it implies a culture that is aligned with the needs of the organization. Good cultures are the ones that provide organizations with adaptation to factors in the environment, but also internal integration, they are appropriate to the organization and the situation of the organization, to achieve this according to Sikavica and associates (2008) there are three key criteria: strategic relevance, that is, the consistency of strategy and culture must be strong in order for people to take into account what is important, must have an internal capacity for adaptation to the changeable circumstances. According to the above, culture

is in the function of strategy when it can be supported by its strenght (power/intensity).

Strong organizational culture is characterized by a clear system of values, the norms of behavior are held up by the majority of people. Majority behaves the same or similar in both – the approach to tasks and in the interpersonal relationships. Strong cultures have a strong influence on behavior. In weak cultures, organizational values are unclear and persistent, and they have no strong influence on the behavior of individuals, this messages sent to employees are not clear and can be interprete din different ways. When thinking about the development and change of organizational culture, it is not the same if we consider strong and dysfunctional culture or functional and weak culture or strong and functional organizational culture. In the functional sence, the literature prevails that the organizational culture enhences the commitment to the organization and increases the consistency of employees behavior. Employees who fit into this value system will survive in the organization, and those who fail to adapt leave the company or feel mostly frustrated and unsatisfied. These negative feelings may be related to the feeling of being disregarded by other members of the organization, fear of job losing, where basically the essential human needs are not met – the need for security and the need to belong. As already mentioned, the power of organizational culture is also reflected in the individual sense of disagreement with organizational culture, and is becoming the most important reason why one begins to think about abandoning a particular organization (Vrančić, 2015).

This all is in favor of the fact that organizational culture has significant, if not decisive influence on all aspects of organizational behavior that further create business results, productivity or overall success of each organization. Thus the linkage of organizational culture and results that can be achieved in the organization is explored (Connors and associates, 2010). Those authors find that the results achieved by an organization can be managed through the individual and organizational sense of responsibility or „accountability“. Connors et al. (2010) state that the result we are currently achieving in the organization reflects the activities that we make as individuals and organization. However, althrough the results are product of activities, it can not be concluded that a smaller or bigger number of activities automatically produce a smaller/weaker or bigger/better results. In practice, it often happens that in the situations where an organization wants a different result, it starts from a logical assumption that different activities should lead to a different result (Connors et al., 2010). The problem arises in situations of action on two so called levels (results and activities) when we are trying to implement different/new activities with people whose beliefs are not in line with desired outcomes, or when we are trying to implement new activities on the old beliefs that have emerged from old experiences. If organizations take this way, often the minimal short-term shifts in the results occur and mostly everything comes down to the old way of acting (Connors et al., 2010). Therefore, according to the model that Connors and associates (2010) suggest, it is necessary to act on all four levels (experiences, beliefs, actions, results), and the greatest challenge in this action is to act on the

level of conviction, since this is usually the result of previous experiences. In this context, it is proposed to create new experiences which in the long run should influence on the creation of different beliefs, which involve taking different activities that provide different results. In other words, it is necessary to create a different organizational culture that will affect the creation of different organizational results.

Organizational culture, value system and connectivity with change management

For a better understanding of organizational culture, the value system should be also taken into account as the one of the key elements of organizational culture. Therefore, the resistance to change the culture, are motives and needs that shape the value system, what is discussed below.

Needle (2010) defines organizational culture through organizational symbols as a state that includes organizational vision, values, norms, systems, symbols, language, assumptions, belief and customs. Managing an organizational culture as well as measuring, quantifying and adaptation to the strategy, points to the process of change management. On the one hand we have an environment that requires adaptation of the organization, and on the other hand there is an organization with its own strategy and goals. In the process of their mutual adaptation, it is crucial to understand the culture of organization and organizational values. Jaffe and Scott (2009) define that the vision and the mission by itself are not enough, since they determine the most important external focus task. Alongside vision and mission, in the organization it is formally or informally determined how the people are expected to work (together, independently, what their mutual relations will be). They believe that in practice it is possible for a group of people to agree on a vision and mission, afterwards, because of different values of their members on how to achieve such vision and mission, conflicts arise (Jeffe, Scott, 2019).

This is confirmed by the McClellend theory of needs (Latham, 2011, Rheinberg, 2006), where the dominant motives of the individual are embedded in values and direct our behavior, that is, determine our belief how and in what way we can or should achieve some goals. The way people achieve goals and realize a vision is as important as the vision itself (Jeffe, Scott, 2009). Questionoing the value, and above all the dominant needs that will direct our behavior and influence the choice of the way of reaching the goal, makes this difference more expressive. Also, it directs group members to consensus on who they are and what is important to them. Therefore, for organizational values, we are saying that they become a guideline for behavior directing.

Organizational culture and specificity of governance in the public sector organization

Some critics point out thet the management of public and private organizations is so different that business practice should not be applied in

the public sector at all (Boyne, 2002). An additional problem creates the contextualization of the term as a public company in the US is a business organization publicly listed on the stock market, while in Europe the same term means the entity with major state ownership. The difference between public and private suggests the diversity of variables such as ownership, openness to influence, value system within society, the environment in which they operate, constraints and organizational culture (Perry, Rainey, 1988). However, as the dominant distinctive variable, the ownership that is in the hands of public organizations is in the public domain and the same property can not be divided between individuals who bear the capital risk (Boyne, 2002). Several authors in particular emphasize the difference in the goals that public organizations want to accomplish (Nutt, Backoff, 1993; Ranson, Steward, 1994; Flynn, Asquer 2017). Bejaković and associates (2011) define public enterprises as a whole of the state-owned and/or state-controlled entities that sell industrial or commercial goods and services to the general public, and ere formed as corporations. A public company refers to a concept that implies elements of publicity and merketability. The elements of the public are reflected in a way that: 1. The most important business decisions are made by the state as the owner of permanent capital (through some of its agencies or bord of directors made by state representatives). The decision-making criteria are not solely linked to financial gain, but also with wider social interests (for instance, social policy). 2. The profit or losses of operations through the state budget belong to the whole community. 3. The public enterprise is responsible for its business to the whole society, that is, to the parliament, as an ultimate „guardian“ of public interest. Boyne (2002) points out that in public enterprises, state officials have a reduced motivation to improve the parameters of organizational excellence.

Ranson and Steward also suggest that the key differences are in the fact that the public companies often have no competition (which is not the case in the observed company), but the fact is that they had a privileged market position. The market elements relate to: 1. expecting a public company to be financially sound in the long run and to be subject of a permanent market check, and that 2. prices that a public company charge should be based on operating costs (it means that prices should cover marginal costs). These two last criteria distinguish a public company from other public activities (education, judiciary and environment protection) (Bejaković and associates, 2011). Rman (2004) considers that public administration, as a service activity, is the most important human factor, given that it represents a larger range of autonomous and developmental activities than, for example, predeterminated and binding forms of organization, procedures, strategies, planning and some other activities of administrative organizations. With an appropriate human resource management system, along with the ability and willingness of administrative management to (re)design an organizational culture, it provides the opportunity to, along with institutional-normative changes, strengthens the habits, behavior and procedures of employees in the long run in a way that is in line with the requirements and expectations of the environmental challenges (Rman, 2004). The same author warns of the consequences that can arise when a public company in the process of

adaptation to social, political or any other modernization must face the necessary interventions in organizational cultures.

Changes in organizational culture whose main elements of values, beliefs, attitudes, standards and customs require more emotional, cognitive and behavioral engagement from people, where organizations can face a rather strong resistance. One of the fundamental features of any organizational culture is its stability and resistance to change. In order to change the culture, the organization must either recognize the existence of a threat to its survival or there must be a stromg external pressure that requires adjustment (Lakos, 2004; according to Balog, 2011).

In the Republic of Croatia, research in the field of organizational culture was carried out by Rendulić (2013), who concluded on the basis of the research that there is a so-called „clan culture“ that proved to be most represented. According to the same author, the most desirable type of culture for this type of organization. Clan culture is characterized by loyalty, personal devotion to the company, tradition and strong sense of identification with the organization (Cameron, Quin, 2011). In accordance with this, it seems that the conclusion about the desireability of a clan culture should generally be taken with the reserve, that means it would be convenient to check what will happen to the business results if the „adhoccrate“ and/or competitive culture share should grew. Interesting findingsof measurements of organizational culture were published in year 2011 as a part of the study Organization of culture in Serbia on a sample of 91 organizations and 859 respondents, out of which 61% of privately owned organizations, 32% organizations in public sector, 3% from other forms of ownership and 4% of organizations that did not respond to the issue of ownership (Human Synergistic, 2011). Based on the results, it was concluded that there are large differences between the current organizational culture and the ideal (desired) organizational culture. The key difference was the insufficient presence of so called constructive and great presence of passive defense culture styles. However, research has shown that private sector organizations show more constructive and less defensive styles, as it is the case with public organizations. Public companies remain characterized by distinctive styles to avoid accountability, to be in opposition, but also to be perfectionist with strong competitive style (Human Synergistic, 2011).

Building upon the above mentioned knowledge of organizational culture, the relationship between ideal and existing organizational cultures and the specifics of the public sector, we come to our main research question: what is the relationship between the existing and ideal organizational culture in organizations operating within the public sector? In line with the above, besides establishing the existing and ideal organizational culture and determining the degree of their connection and differences, the dominant values/motives, i.e., the order of their expression (achievement, power, relationships) were analyzed, since values/motives are the basis of human behavior and they manage our behavior. The overlap between the ideal and existing culture and behaviors expected in the implementation of the activities themselves will simpler and faster lead to results The deviation analysis can more clearly direct the organization towards incentives and

expectations of employee behavior changes at all levels, while the analysis of the dominant motive in the value system in strategic management can give an explanation of the extend to which the development of an ideal culture can be expected.

A case study comparing the ideal and existing organizational culture and the existing value system on a example of an organization in the public sector.

The organization where this case study was conducted belongs to the public sector organization, its primary activity is to provide service to citizens in the field of communication (mostly with the state apparatus), financial services and retail. Establishing and measuring organizational culture was carried out in cooperation with the consulting house Human Synergistics in June 2014.

GOALS

G1: To identify and analyze the ideal and existing organizational culture, their overlapping and differentiation, and the connection to all 12 dimensions/styles of culture on a sample of strategic managers.

G2: By applying a value questionnaire to determine and to analyze the results of predominantly expressed values/motives on a sample of strategic managers.

G3: To examine the correlation between predominantly expressed values with a description of behavior characteristic for an individual with a dominant value and the answer to a question: “When thinking about your job what motivates you to a greater extent?”

METODOLOGY

Measuring of organizational culture in an organized workshop/education was carried out using a questionnaire and pencil-paper mathod. The measurement of a dominant motif was carried out in June 2015 on the sam sampl of respondants. Th difference between current and ideal culture was attempted to be explained by determining the dominant values/motifs (between motives for achievement, motives for maintaining/developing interpersonal ralations and motives for power/influence that we can have on others) that represents a framework for value system, which can „support“ the development of an ideal organizational culture and ensure achievement of results.

Respondents

In this case study there are 22 respondents (members of the Board and top management), who as a group determine the strategy of the organization. Since in this research we will not analyze nor will the results be linked to the socio-demographic characteristics of the employee, such data from the respondents were not even sought. All the results are considered as a group, average score.

The scale for determining the organizational culture

For determining the ideal and existing organizational culture the data obtained by measuring the Human Synergistic Organizational Culture Inventory (OCI) were used. The questionnaire has two forms: form for determining the existing culture and form for determining ideal culture. It contains a list of claims describing some of the behaviors and personal styles that can be expected or implicitly requested by members of the organization. Some of the cultural norms measured by the OCI questionnaire are povitive and can support constructive interpersonal relationships, effective problem solving and personal development. Others are dysfunctional and can lead to unnecessary conflict, dissatisfaction and in a mumber of organizational members can cause certain symptoms of tension. The results are presented on so called Circumplex through 12 behavioral norms grouped into 3 types of culture: Constructive, Passive-defensive and Aggressive-defensive culture.

Scale to determine the dominant motive

Determining the dominant motive within the system of values is verified by applying a personal value questionnaire (eng. personal Value Questionary (PVQ)), translated into Croatian language. The questionnaire containts 36 statements in which the respondents, on a scale from 0 to 5 (not important to me, exceptionally important to me), determine to what extent they agree with the stated quotes, ie to what extent a certain claim is of particular importance to them. In order to determine the difference between the motives, the results obtained by the questionnaire and the direct question what motivates them the most of the three motives, another additional question has been asked (example of questionnaire and additional question can be obtained directly from the authors of this case study). Also, in order to examine the difference between the results obtained on the personal value and self-perception questionnaire through a description of the typical behavior and thinking of an individual who values the achievement, development of relationship of power/influence, another additional question has been created (example of questionnaire and additional question can be obtained directly from the author).

Method

Since the survey was conducted on a relatively small number of respondents (22), mostly simple descriptive indicators were used which would be a quide

for the organization and implementation of empirically valid research on the same topic. In the analysis of the connection between the ideal and the existing organizational culture and the connection between the motives within the value system as determinated in the Sperman Rho coefficient of correlation, and since there were in addition to the interval variables also two nominal variables, when determining the correlation of the dominant motive and the self-perception of the respondents of what motivates them, the Cramer V coefficient of the correlation is counted. All datasheets and images that represent data collection through the research of organizational culture in an organization that was conducted in year 2014 by certified people from Human Synergistics cover internal documents.

RESULTS

While measuring the existing organizational culture it was established, that in the culture of this company the passive-defensive and aggressive-defensive style of culture was dominantly emphasized, while the constructive style is not present at all. In a passive-defensive style, a culture of avoidance and conventional culture are emphasized, and in the aggressive-defensive style, the opposition style and the style of competition culture are emphasized. An ideal/desired culture which should support strategic goals was measured. The ideal culture should have a constructive style in which the greatest emphasis would be on the humanist-encouraging culture, culture of self-actualization and achievement, and finally on the culture of sociability. Also, the ideal culture should contain some elements of competition and perfectionist culture.

In the existing culture, on average, most of the values belong to the dimensions of the culture of passive-defensive style, where the most prominent ones have been the conventional (psat4 M=34,23) and dependent culture (psat5 M=33,55), the least expressed is the culture of self-actualization (psat12 M=26,27). In the ideal culture, the highest average values belong to the dimensions of the culture of constructive style, this is the culture of sociability (isat2 M=43,18), the smaller values are of the avoidance culture that belongs to the passive-defensive style (isat6 M=14,09). The results of all 12 dimensions of the culture (see Table 1 and Table 2 in Appendix) were tested by t-test for dependent samples and proved to be statistically significant.

As can be seen in Table 3 (in Appendix) the greatest statistical significance of the difference between the existing and the ideal organizational culture is in constructive styles of the humanistic and encouraging dimension, culture of achievment and socialization and self-actualizating culture but also in passive-defensive styles, and in the dimension of the culture of evasion, dependence and convencional culture. In the aggressive-defense styles the larger statistically significant difference is in the dimension of the opposition culture.

The deviation between the existing and ideal dimensions of the organizational culture is expressed as the difference between the existing

and the ideal culture for each individual dimension. The positive value of the deviation indicates a more pronounced existing culture, while the negative discrepancy points to the expressed ideal organizational culture. Results show that the highest average deviation/discrepancy between the ideal and existing culture is recorded in the avoidance culture (dsat6 M=18,95). The dimensions of constructive styles: humanistic-encouraging culture, social conscience, culture of achievement and self-actualization, culture of perfectionalism as the dimensions of aggressive-defensive cultural styles, represent the dimensions of cultures that are estimated to be desirable, much more then they do exist in the organization. Other dimensions are more prominent than their desirability. The greatest deviation was recorded in the dimensions of the avoidance culture and the conventional culture, where this dimensions were perceived as very pronounced, but undesirable.

In order to ascertain the correlation between different styles, correlations have been calculated (Table 1), the result is that the correlation between dimensions of an existing organizational culture is much more tight than between the dimensions of an ideal organizational culture. For instance, the humanist-encouraging existing culture is significantly more associated with as many as eight remaining dimensions of the existing culture, while the humanist-encouraging ideal culture is closely related to only four dimensions of ideal culture. Based on the results so far, that relate to the first research goal, it can be concluded that there are statistically significant differences between the ideal and the existing organizational culture, bith among the dimensions themselves, and in relation to the average deviations between dimensions. Also, statistically significant links (positive and negative) were established between the existing and ideal culture, as well the statistically significant links between the styles of culture and dimensions inside existing, but also inside ideal culture.

Of the ideal/desired culture that should support the strategic goals, a highly constructive style is expected in which the greatest emphasis is on the humanist-encouraging culture, the culture of self-actualization and achievement, and the culture of sociability. It is also expected to retain (somewhat pronounced) elements of the aggressive-defensive style, with certain levels of opposition culture and culture of competition and empowering of the perfectionist culture influence. Other dimensions are estimated in the existing culture as more pronounced than expected from the ideal culture. The largest discrepancies were recorded in the dimensions of the avoidance culture and the conventional culture, where this dimension is perceived as very pronounced, but undesirable. The constructive style of the existing culture is almost not perceived as present, and it differs from the ideal style, so it could be assumed that the culture of achievement is focused on goals and results as much as the employees feel involved and how much they are actually engaged. Conversely, employees are probably engaged and feel involved to the extent where their organization focuses on realizing enthusiastic goals (Table 2). According to these results and the existence of correlation among the styles of the existing culture, it can be expected that the changes in the direction of strenghthening f the humanictic-encouraging culture will be linked to the changes in the culture of achievement in a

positive direction. Furthermore, here is a correlation between existing culture and self-actualization (0,575; p<0,01), where quality is appreciated, not just the volume of work done, the task execution and also the development of an individual and where employees work with pleasure, we can say that the focus culture on the achievements is as big as much as the employees feel that in their work the quality is appreciated, task performance as well as the development focus. And vice versa. In the existing culture of this organization avoidance is the most prominent feature of the culture, the humanistic-encouraging culture almost does not exist, it is clear in which direction the interpretation is going. It seems that the humanist-encouraging culture is present to the extent that it is expressed in avoidance. That means, avoidance strives for higher results and is more pronounced in culture so it is possible that the encouraging culture may be less pronounced. This finding suggests that in organizations a culture of avoiding responsibility becomes stronger, when the employees do not feel involved, encouraged, and when they are not expected or rewarded for constructive contribution and the attention is drown on the mistakes they make. And vice versa, if the avoidance of responsibility and the fear of mistake are the characteristics of the work in the organization, employees may have a lesser degree of the need for inclusion and consequently it is less likely that they will suggest constructive solutions because they are afraid of mistakes. Very similar is the result of a high correlation of the avoidance culture in the existing culture with a conventional culture, but in a positive direction (r=830; p<0,01). In comparison with the obtained result, it seems that the more bureaucracy there is and rules that regulate the behavior, the degree of avoidance will be bigger, and vice versa.

Intercorrelation to an ideal culture, a positive correlation between the culture of sociability and a humanistic-encouraging culture, suggest that due to the greater focus on the development of constructive interpersonal relationships, changes in the deggre of employee inclusion and engagement might occur. The ideal humanistic-encouraging culture is related to the culture of selfactualization (r=0,569; p<0,1). The culture of selfactualization is characterized by the ways in which by employees quality is more valued then quantity, as well creativity and task performance, then the culture of selfactualization can become more pronounced by increasing of the involvement and encouragement of employees in the development of constructive relationships with others and engagement. Another positive correlation between the culture of avoidance and the opposition culture in ideal culture was recorded (r=0,603; p<0,01). Namely, in the ideal, a weaker presence of behavior, characteristic for avoiding responsibility is expected, this could further result in a reduction of the need for opposition (nonconstructive) behavior. The ideal culture is also marked by a positive connection between culture of power with the culture of competition (r=0,585;p<0,01). In this case, with a less pronounced culture of power (where power will not necessarly be instrumental, i.e., condicioned ny the position) and where more involvement and information sharing from employees is required, a slightly less pronounced competitive behavior among employees is expected, and vice versa.

It seems that strategic managers still maintain a certain presence of the culture of accepting and avoiding conflict, and that the certain elements of that culture are associated with the culture of good interpersonal relationships. Therefore, it can be assumed that the existence of the conflicts is a barrier for building good interpersonal relationships. This assumption, of course, can/should be further verified in some future research.

In relation to the second research, the respondents, to a large extent, identify the achievement as the dominant motive in the questionnaire of values, the result for the motive for power/influence on others is at least present. Of the total number of respondents to the question when they are thinking about their job, what motivates them to the greatest extend, 71% of the answers concerned the achievenent, the smallest percentage of answers (4,8%) reffered to the impact/power as a value. However, when respondents chose a response describing behavior in which the described behavior refers to the people who have these values expressed, they changed their decision and in more then 47% of the cases have chosen a descripion of the value of the influence/power, and the least achievement (23,8%). The results of the t-test show that there is a statistically significant difference between the values/motives of achievenent and attitudes, and from the arithmetic mean is evident that the motivation for achievement is statistically significantly pronounced then the motives for maintaining and developing interpersonal relationships ($t=4,912$; $df=20$; $p<,01$). Indeed, the results of the t-test show that the motivation for achievement is statistically significantly higher than the power motive or the influence they may have on others ($t=6,795$; $df=20$; $p<0,1$). The difference between maintenance of motives and the development of relationships and motives for power is not statistically significant ($t=1,989$; $df=20$; $p>,05$). Therefore, significant difference in motive expressions were found. On this sample of respondents the most prominent motive is the motive for achievement. Between motives for maintaining and relationships developing and motives for power, the established difference is not statistically significant.

In response to the third research objective, the correlation between motives obtained by using the value questionnaire (Personal Values Questionnaire) was studied. No correlation has shown any statistical significance, so the interpretation of the results goes in the direction of the absence of correlation between individual motives. Between the dominant value/motivation genered by the questionnaire and the motivation obtained by answering the question:“when you are thinking about your job, what in fact motivates you in the greatest measure?“, there was a significant positive correlation ($r=0,568$; $p<0,05$). Taking into account the above mentioned, it can be concluded that the respondents who, with the dominant achievement in questionnaire, have more often chosen achievement as the answer on the question asked, ie their result in the questionnaire is generally equal to the result of selfperception of their motivation when it was established as the response to the above mentioned question. When the motive was determinated by selfperception so that the participant chooses a description that describes it the best, the connection of the established motivation has not been shown to be statistically significantly related to the dominant motive/value obtained in

the questionnaire (r=0,357; p>0,05). Respondents with the motivation for achievement in the questionnaire, chose more often in the description of behavior the form of behavior that is related to the value of the influence on others/motive for power. In other words, the motivation obtained by questionnaire and by choosing a description of the behavior that represents a particular motive, probably does not represent the same construct. The results of the questionnaire can not predict with certainty adescription of the behavior that the respondents will choose. Statistically significant connection was not obtained either between the motives obtained by the two ways of selfperception - the answer to the question: “when you are thinking about your job, what in fact motivates you in the greatest measure?”, and by choosing a description of behavior that is characteristic for individuals with prominent stated motives/values (r=0,346; p>00,05). According to this, respondents who choose achievement, development of relationships with others or influence, between the offered answers, are not consistent in choosing a response when the same question is posed through the described behavior. Based on the results, in response to the third research goal, it can be concluded that there are statistically significant differences in the expression of the respondents motives and that on this sample of the respondents most expressed motive is the one for the achievement. Between the dominant/ motivational value obtained by the questionnaire and the motivation obtained by answering the question:“when you are thinking about your job, what in fact motivates you in the greatest measure?“, a significant positive correlation has been achieved. Respondents with achievement as a dominant motive in the questionneire, often chose achievement in response to the question.

RESEARCH LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

Since in the existing organizational cultures (as perceived by strategic managers), most of the dimensions stand in correlation with one another, it is assumed that future research could go in the direction of explaining a variations of a culture with the help of other dimensions. If the sample of the respondents was larger, more robust statistical methods could be used, in which, for example, by regression analysis or analysis of variations, conclusions could be drawn as to which culture can explain the variations of another culture and to what extent. Also, regarding the ideal culture, correlationa of a smaller number of dimensions habe been shown, some of which are inconsistent with theoretical expectations. Therefore, future research could, in a detailed manner and, of cource, in a much more representative sample of examinees, investigate whether they are in the perception of an ideal culture, differences between different assessors are statistically significant. Given that the results of this research are related only to strategic managers, in addition to the expanded number of respondents (a more representative sample), further research could go in the direction of “more accurate” estimation of the existing and ideal situation in a way to

compare the estimation that managers give to other employees. Also, it would be interesting to check by modeling method, so called estimation 360, what results would be obtained by comparing organizational cultures in individual organizational units, assessed by managers for the units they manage with an assessment of the status of their organizational units by their fellow managers. Given that the organization did not have a list of values at the time of the survey, future research would help to check to what extent the values were expressed through achievement, focus on the relationship and power/influence associated with list of values, which the company found relevant in this case study. All the questionnaires were solved anonymously so methodologically it is not justified to draw conclusions about the correlation between the motives for achievement, the development of relationships and the power/influence we have to others, with the results obtained for the existing and ideal culture. However, the existing results in some way create the preconditions for future research. Based on the results obtained in this case study, some future studies could examine whether there is a correlation between the styles of culture and motive/value. Likewise, it seems justifiable to check why the existing culture of achievement and other cultures of constructive styles are not expressed to the expected extent, while power as an unconstructive style is expressed, considering that by managers to a large extent a motive for achievement, and the least motive for power/influence expressed is. All given clarifications and conclusions, because of a small number of respondents, should be taken with caution. Also, the existing, high, significant correlations should be observed with the retention, since there was such a small number of respondents and the correlations could be quite unstable and vary with the increase of the respondents number. The results should first of all be seen as guidelines for the future research on this issue, both in the organizations and in the research of the organizational culture in general. The limitation to the stated results as well with the main conclusions that will follow, constitute the anonimity, due to which the correlation of the response about the existing ideal culture with the answers to the value questionnaire has not been verified. But, on the other hand, during anonymous interrogation it can be assumed that there will be more sincerity in responses. Also, most of the results and comments refer to the describtion of a public enterprise culture from this case study that was measured on a small (but culturally influential) sample of respondents and are based on the assumption of leadership by model. It was assumed that if the strategic manager evaluates the importance of value, selects and evaluates „correct“ behaviors and the mode of operation (which is one of the fundamental definition of the culture), that the same kind of behavior, based on values and the desired culture, could also be expected from his closest associates/subordinates. This assumption is not fully justified until the dominant management model is not empirically verified, that could also be the guideline for future research on this topic.

CONCLUSION

Each organization strives, wants and tries to manage its organizational culture. In this paper the existance of a statistically significant differences between ideal and existing culture in the observed company were determined through the results of the research. Statistically significant differences exist between the dimensions themselves, but also in relation to the average established deviations among these dimensions. The existing organizational culture can ce considered insufficiently functional, that means, it can ensure the realization of the strategic goals in an much more difficult way, it has the characteristics of the passive-defense and aggressiv-defense style where the culture of responsibility avoidance, conventional, dependent culture and opposition are emphasized. Constructive styles of culture in the observed organization are virtually not represented.

Within the existing culture, most dimensions are in mutually statistical significant correlations, suggesting that the expression or presence of a culture of a particular style corresponds to and is associated with the greater or lesser expression of another culture in the same or another style. Most connected with other styles of culture, among unconstructive styles is noted in opposition culture, culture of avoidance, and in humanist-encouraging culture and the culture of achievement among the constructive styles. The expected ideal culture is dominant-constructive with a pronounced culture of achievement and a humanist-encouraging culture. In it the passive-defesive styles are almost not represented, yet it implies to retain certain elements of the aggressive-defensive styles (a certain level of opposition style, competition and higher level of culture of perfectionism which are not sufficiently expressed in the existing culture).

In ideal culture, the dimensions of constructive cultures are positively related, which supports the conclusion that any change in the culture within a constructive style can be associated with a change within another culture of constructive style. The greatest connection between constructive styles has been shown between the culture of achievement and culture of social conscience and the humanist-encouraging culture. In other words, changes that may occur in the culture of achievement can be positively associated with strengthening and quality in the area of interpersonal relations and the increase in the involvement and engagement of employees, or changes in engagement and involvement can be linked to changes in the culture of achievement. Also, given that the greatest coefficient of connectivity was between the opposition culture and the avoidance culture, it is expected that when the behavior characterized by avoidance of responsibility is pronounced to a lesser extent, this can result in the reduction of the need for opposition (unconstructive) behaviour and conflicts, but not vice versa. Some unexpected connections are not easy to interpret, they are rather questionable because of a relatively small sample.

As far as values of achievement, development of relationships and power/influence are concerned, the results obtained by questionnaires and the direct question of what motivates them, the achievement is set as the highest value and the value of power is less pronounced. Of all the above results, despite all the limitations of this research, it seems that managers equally and in average harder realize the importance of their role in changing

and creating a new, ideal organizational culture, they achieve greater expected business results through greater effords from the position of the existing culture. In this way, in line with the clarification offered by McClelland (Rheinberg, 2006), they do not act in accordance with their values, ultimately, reaching the results for them and their people can be frustrating and stressful, and the satisfaction with the way in which the result that is not in accordance with our values is reached is probably not complete.

The changes that the organization from this case study can take, if the recommendations are based on these results, refear to define activities that will affect the rise of constructive styles, with the parallel reduction of passive and somewhat aggressive-defensive styles. Therefore, for this organization, managing an organizational culture is a challenge to which it is possible to respond, as it has a basis in the values of the key people. Their existing values are in line with the ideal of culture that this organization wants to achieve, but this is not fully expressed in the order expected by the theory (Rheinberg, 2006). Namely, according to the theory, it is expected that the most significant is the value of power/influence -so called sPow, after that there is the motive for achievement, while the development of the relationship is on the last place. In this sense, strengthening of the so called accountability, ie assuming personal responsibility for the desired changes, awareness of the strenght influence of the managerial role is the first and crucial step in building a functional organizational culture, as well the changes that the organization makes to be alive, present on the market and adaptable to the environment in which it accomplishes the goals, mission and ultimately vision. Finally, altrough the roots of organizational culture go to Weber and Fayol, it can be concluded that there is still a great deal of room for the empirical research and theoretical conceptualization of this interdisciplinary, propulsive and dinamic scientific theme.

REFERENCES

Balog, P. (2011). Kultura vrednovanja kao dio organizacijske kulture hrvatskih knjižnica. Vjesnik bibliotekara Hrvatske, 55(1), 1–28.

Bejaković, P., Vukšić, G., Bratić, V. (2011). Veličina javnog sektora u Hrvatskoj, Hrvatska i komparativna javna uprava. Časopis za teoriju i praksu javne uprave, 11(1); 99–125.

Bhattacharyya, D. K. (2015). The Magnetic Organization: Attracting and Retaining the Best Talent. SAGE, Los Angeles.

Boyne, G. A. (2002). Public and Private Management: What's the Difference? Journal of Management Studies, 39(1), 97–122.

Bryant, A. (2014.) Quick and Nimble: Lessons from Leading CEOs on How to Create a Culture of Innovation - Insights from The Corner Office. Times Books, New York.

Cameron, K. S., Quinn, R. E. (2011). Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework. Jossey-Bass, San Francisco.

Connors, R., Smith, T., Hickmann, C. (2010). The OZ principles Getting Results Through Individual and Organizational Accountability. Penguin Group, New York.

Chang, S., Lee, M. S. (2007). A study on the relationship among leadership, organizational culture, the operation of learning organization and employees' job satisfaction. The Learning Organization Journal, 14(2), 155–185.

Denison, D., Hooijberg, R., Lane, N., Lief, C. (2012). Leading Culture Change in Global. Jossey-Bass, Danvers.
Denison, D. R., Spreitzer, G. M. (1991). Organizational culture and organizational development: a competing values approach. Research in Organizational Change and Development, 5, 1–21.
Firsirotu, M. E., Allaire, Y. (1984). Theories of Organizational Culture. Organization Studies, 5(3), 193-226.
Flynn, N., Asquer, A. (2017). Public Sector Management, SAGE, London.
Kimberly, J. R., Quinn, R. E. (1984). Managing Organizational Transitions. Academy of Management Review, 10(3), 620–624.
Kotter, J. P., Heskett. J. L. (1992). Corporate Culture and Performance. Free Press, New York.
Latham, G. P. (2011.), Work Motivation: History, Theory, Research, and Practice. SAGE, London.
Needle, D. (2010). Business in Context: An Introduction to Business and Its Environment. Cengage Learning EMEA, Singapore.
Nutt, P. C., Backoff, R. W. (1993). Transforming public organizations with strategic management and strategic leadership. Journal of Management, 19(2), 299–347.
Parker, M. (2000). Organizational Culture and Identity: Unity and Division at Work SAGE Publications, London.
Perry, J. L., Rainey, H. G. (1988). The Public-Private Distinction in Organization Theory: A Critique and Research Strategy. Academy of Management Review, 13(2), 182–201.
Pettigrew, A. M. (1979). On studying organizational cultures. Administrative Science Quarterly, 24(4), 570–581.
Rman, M. (2005). Javna uprava i organizacijska kultura. Anali Hrvatskog politološkog društva, časopis za politologiju, 1(1), 253–265.
Quinn, R. E., Rohrbaugh, J. (1983). A Spatial Model of Effectiveness Criteria: Towards a Competing Values Approach to Organizational Analysis. Management Science, 29(3), 363–377.
Ranson, S., Stewart, J. (1994). Management for the Public Domain Enabling the Learning Society. Palgrave, MacMillan, New York.
Ravasi, D., Schultz, M. (2006). Responding to organizational identity threats: Exploring the role of organizational culture. Academy of Management Journal, 49(3), 433–458.
Schein, E. A. (2017). Organizational culture and leadership. Jossey Bass, San Francisco.
Smircich, L. (1983). Concepts of Culture and Organizational Analysis. Administrative Science Quarterly, 28(3), 339–358.
Stewart, J., Ranson, S. (1988). Management in the public domain. Public Money & Management, 8(1-2), 13–19.
Sušanj, Z. (2005). Organizacijska klima i kultura. Naklada Slap, Zagreb.
Vrančić, I. (2015). And people? Why are Managers´ cars the most important asset in every organization? Planetopija, Zagreb.
Van Duinkerken, W., Kaspar, W. A. (2015). How to create Service Culture. Alpha Pub House, Royersford.

APPENDIX

Table 1. Intercorrelation of styles and ideal organizational culture of the public enterprise
Source: Own survey.

	sat1	sat2	sat 3	sat4	sat5	sat6	sat7	sat8	sat9	sat1 0	sat1 1	sat1 2
sat1		,778**	-,226	-,573**	-,331	-,803**	-,606**	-,460*	-,270	,550**	,783**	,630**
sat2	,611**		-,304	-,648**	-,483*	-,758**	-,272	-,464*	-,320	,484*	,671**	,747**
sat3	-,005	-,373		,603**	,218	,502*	,075	,047	,017	-,063	-,239	-,196
sat4	,020	-,181	,309		,467*	,830**	,423*	,499*	,292	-,231	-,507*	-,495*
sat5	-,109	-,250	,214	,493*		,409	,156	,507*	,416	,006	-,368	-,184
sat6	-,041	-,285	,272	,433*	,211		,604**	,510*	,399	-,417	-,667**	-,453*
sat7	-,039	,031	,176	,395	-,015	,603**		,466*	,472*	,022	-,375	-,162
sat8	-,172	-,259	,133	,203	,389	,342	,375		,729**	,111	-,184	-,141
sat9	-,173	-,443*	,410	,252	,384	,479*	,095	,585**		,178	,067	,104
sat10	-,459*	-,041	-,083	,296	,212	,124	,400	,250	-,042		,513*	,471*
sat11	,539**	,620**	-,130	-,350	-,223	-,415	-,219	-,259	-,315	-,228		,576**
sat12	,569**	,289	-,076	,085	,240	-,063	-,162	,006	-,111	,012	,308	

Table 2. Correlation between the styles of the existing organizational culture and the styles of an ideal organizational culture in a public enterprise

		Dimensions of the existing organizational culture											
		psa t1	**psa t2**	**psa t3**	**psa t4**	**psa t5**	**psa t6**	**psa t7**	**psa t8**	**psa t9**	**psat 10**	**psat 11**	**psat 12**
Dimenzije idealne organizacijske	**isat 1**	,074	,028	-,222	-,017	,058	-,078	,147	,221	,009	,436*	-,020	,151
	isat 2	-,062	-,012	-,234	-,013	,232	,008	,148	,321	,245	,059	,029	,283
	isat 3	,313	,433*	-,313	-,191	-,316	-,300	-,043	-,125	-,218	,084	,215	-,109
	isat 4	,276	,186	-,124	-,359	,140	-,487*	-,365	-,003	-,156	,265	,218	-,046
	isat 5	,227	,019	,023	-,141	-,008	-,214	-,124	,030	,022	,060	,249	-,056
	isat 6	,402	,372	-,123	-,283	-,300	-,456*	-,333	-,036	-,005	,512*	,609*	,127
	isat	,192	,345	-	-	-	-	-	,010	,195	,272	,485*	,139

	7			,058	,164	,161	,334	,097					
	isat 8	,028	,024	,326	,069	-,248	-,112	,024	,140	,085	,131	,268	-,260
	isat 9	,219	,223	,151	-,036	-,469*	-,256	-,317	-,123	-,446*	,044	,230	-,161
	isat 10	-,016	-,057	,155	-,008	,184	-,032	-,145	-,052	,093	-,204	,121	-,087
	isat 11	,041	,111	,196	,141	,110	,171	,269	-,009	-,028	,117	,007	,374
	isat 12	-,160	-,186	-,035	-,010	-,086	,129	,342	,041	-,052	,147	-,231	-,183

Source: Own survey.

The legend of Table 1 and Table 2:
prefix p- represents existing culture; prefix i -represents ideal culture

sat1 – humanistic encouraging; sat2 – culture of sociability; sat3 – culture of acceptance; sat4- conventional, sat5 - dependent culture; sat6 – culture of avoidance; sat7- culture of opposition ; sat8- culture of power; sat9- competitive culture; sat10- perfectionalistic culture; sat11- culture of achievement; sat12-culture of self-actualization.

Note:*correlation is significant at a significance level of 0,05; ** correlation is significant at significance level of 0.01

Table 3: Impact of variance factor F-test

Model		**Collinearity Statistics**	
		Tolerance	VIF
1	(Constant)		
	L1	.235	4.252
	L2	.277	3.610
	L3	.727	1.375
Dependent Variable: ROE			
Dependent Variable: ROA			

Source: Own survey.

PRICING OF LIQUIDITY RISK IN THE INDIAN STOCK MARKET

Namitha K Cheriyan*
CHRIST, India
namicheriyan@gmail.com

Daniel Lazar
Pondicherry University, India
lazar.dani@gmail.com

Abstract

Empirical literature from developed stock markets identifies liquidity risk to have impacts on the price of a stock. Given this, using one-minute trade and quote data of fifty stocks constituting the NIFTY 50 Index, this study examines the pricing of liquidity risk in the Indian stock market. The study uses thirteen liquidity measures identified from literature that cover the cost, quantity, time and multidimensional aspects of liquidity. The innovations in the liquidity measures are considered as the proxy for liquidity risk. Employing Generalized Methods of Moments estimation, the study proves that Indian investors expect to have a premium for holding securities that are illiquid when the whole market is illiquid. It proves liquidity risk as a priced factor and thus validates the liquidity-adjusted capital asset pricing model in the Indian stock market. It cautions the investors that the liquidity shocks can have significant inferences on portfolio diversification strategies to be adopted.

Key Words

Liquidity; liquidity risk; liquidity innovations; capital asset pricing model; liquidity beta; GMM.

*Corresponding Author

INTRODUCTION

Liquidity holds direct linkage with the returns required by the investors out of their investments (Amihud, Mendelson, 1986; Datar, Naik, Radcliffe, 1998; Bekaert et al., 2007) and thus has implications for the investment performance as well as portfolio diversification strategies. Liquidity is often considered both as a risk factor (Acharya, Pedersen, 2005; Pastor, Stambaugh, 2003) and as a characteristic of asset returns (Brennan, Subrahmanyam, 1996). It is an important component affecting the efficiency of asset pricing models (Chordia, Roll, Subrahmanyam, 2008). The liquidity risk which is regarded as the possibility of liquidity being disappearing from the market is also proved to be significantly impacting the asset prices (Acharya, Pedersen, 2005).

The market microstructure literature provides enough empirical evidence to prove that liquidity and asset pricing have a relationship (Acharya, Pedersen, 2005; Pástor, Stambaugh, 2003; Brennan, Subrahmanyam, 1996). The lower the liquidity of an asset (due to higher transaction costs), higher will be the return expected out of the asset. A more liquid asset will have a higher price for which it can be sold. This liquidity consideration is a must as it affects financial policies.

The traditional, as well as modern multidimensional measures of market-wide liquidity, are empirically proved to be doing a reasonable job in capturing overall levels of market liquidity. It shows that these levels of liquidity have a certain influence on the determination of the price of a security (Acharya, Pedersen, 2005). However, Pastor and Stambaugh (2003) point out that such measures are not apprehending the innovations or the unexpected changes in liquidity which affect the asset pricing worsen than the level of liquidity. Therefore, to capture innovations in liquidity or to calculate innovations in aggregate market-wide liquidity, they propose averaging the changes in liquidity at the individual security level. These innovations in liquidity are regarded as the liquidity risk and gained wider acceptance in market microstructure literature (Lee, 2011). Such studies document the liquidity risk as a factor contributing to the price of a stock in the market.

Most of the empirical literature analysing the role of liquidity risk in determining the price of an asset is focused on the US market (Acharya, Pedersen, 2005; Lee, 2011; Pastor, Stambaugh, 2003). The idea behind such exclusive focus is the increased reliability of developed market data and therefore that of the inferences made out of such data (for instance, Liang and Wei, 2012). Contrarily, the literature also provides that the effects of liquidity could be more resilient in emerging markets, given the relatively scarce liquidity scenario in such markets compared to developed economies. For instance, Amihud et al. (2015) document higher illiquidity premiums in emerging markets. Similarly, while establishing strong positive (negative) responses in prices followed by positive (negative) price shocks, Lasfer et al. (2003) reveal that the momentum phenomenon is economically more significant to the emerging markets. Therefore, the emerging markets are expected to be tested and analyzed more powerfully and to provide better

insights. There are some attempts in literature in this direction. Hearn (2010) investigates the size and liquidity effects for emerging stock markets of South Asia, and Donadelli & Prosperi (2012) document the significant liquidity risk-adjusted returns in emerging countries, to name a few. However, such studies are limited in number and there exists a lack of studies testing the validity of liquidity-adjusted CAPM in emerging stock markets, including Indian market, which is the need of present-day market microstructure literature, given the strong integration among global markets that are often challenged by liquidity downturns. Thus, the present study attempts to examine whether the liquidity risk is a priced factor in Indian stock market.

DATA AND METHODOLOGY

This study employs one-minute trade and quotes data of fifty stocks constituting NIFTY 50, the most active stock market index of India for a period from 1st January 2016 to 31st December 2016 comprising 246 trading days. The trade and quotes data employed in the study include the minute-by-minute bid price, ask price, trade price, bided volume, asked volume, traded volume, number of trades occurred, number of transactions bided, and number of transactions asked. The 1-minute sampling frequency provided for 374 data points from 9:16 am, to 3:29 pm resulting in a total of 92,004 trading observations per stock.

Thirteen measures of liquidity are determined for each security for every one-minute interval corresponding to all the 246 trading days. The measures used in the study are of four broad categories based on the dimension of liquidity that a particular measure covers viz. cost, quantity, time and multidimensional measures. The cost dimensional measures consist of quoted spread (S_t), proportional quoted spread (PS_t), effective spread (ESPR) and proportional effective spread (PESPR). The quantity dimensional measures include turnover (V_t), depth (D_t) and value depth (VD_t). The number of transactions (N_t) attributes to the time dimensional measure and quote slope (QS_t), log quote slope ($LnQS_t$), composite liquidity (CL_t), Amihud measure (AMR), and flow ratio (FR) to the multidimensional measures.

Aggregate market-wide measures of liquidity are arrived at by averaging individual security-level measures. To calculate innovations in market-wide liquidity measures which are considered as a proxy for liquidity risk, changes in individual security-level liquidity measures are averaged as suggested by Pastor and Stambaugh (2003).

The daily innovations in market-wide liquidity are fit into Principal Component Analysis (PCA) and principal components are derived for the innovations in cost dimensional measures, innovations in quantity dimensional measures and innovations in multidimensional measures. These innovations essentially return the liquidity risks arising out of cost, quantity and multidimensional aspects of liquidity. The innovations in market-

wide liquidity (or liquidity risk) due to the fluctuations in the number of transactions are taken as such.

Using the liquidity innovation series, three different liquidity innovation betas are constructed viz. the beta arising out of covariance between liquidity innovations of individual security and the market, the beta due to covariance between return of individual security and the market-wide liquidity innovations, and a third one arising out of covariance between market return and the liquidity innovations of individual security. From these three betas, two additional betas are measured as given by Acharya and Pedersen (2005).

Generalized Methods of Moments (GMM) estimation is used to test the validity of the liquidity-adjusted capital asset pricing model. Developed by Hansen (1982), GMM is considered as an adoptable econometric technique in empirical research as it provides a unified framework for comparison with the minimum number of assumptions. The GMM estimation is further benefited as it facilitates the estimation of coefficient, where the likelihood analysis looks to be impossible. Widely employed in empirical research focusing on asset pricing, this econometric technique made it possible to evaluate the asset pricing models using more realistic assumptions about the characteristics of underlying stochastic process that controls the time-varying evolution of explanatory variables (Hansen, Hodrick, 1980; Hansen, Singleton, 1982). The GMM is further considered as a significant tool as it allows the asset return to be serially correlated with the stochastic discount factor. It also offers the results that are binding irrespective of the leptokurtic or heteroscedastic distribution of asset returns and the associated discount factors.

CONSTRUCTION OF THE BETAS

Three liquidity innovation betas are calculated aiding the liquidity innovation series. These betas and the additional betas calculated for the analysis are explained in this section.

The first beta constructed is based on the covariance between liquidity innovations of individual security and that of the market, as provided in Equation (1). The second beta is arising out of the covariance between the return of individual security and the market-wide liquidity innovations (Equation (2)) and the third one is based on the covariance between market return and the liquidity innovations of individual security (Equation (3)).

$$\beta 1_{it} = \frac{\sum_{p=1}^{N_t} LIQINN_{ipt} LIQINN_{mpt}}{\sum_{p=1}^{N_t} R_{mpt}^2} \quad (1)$$

$$\beta 2_{it} = \frac{\sum_{p=1}^{N_t} R_{ipt} LIQINN_{mpt}}{\sum_{p=1}^{N_t} R_{mpt}^2} \quad (2)$$

$$\beta 3_{it} = \frac{\sum_{p=1}^{N_t} LIQINN_{ipt} R_{mpt}}{\sum_{p=1}^{N_t} R_{mpt}^2} \quad (3)$$

Here, $LIQINN_{ipt}$ refers to the liquidity innovation of individual stock *i* during the interval *p* of trading day *t*, $LIQINN_{mpt}$ is the liquidity innovation of market during the interval *p* of trading day *t*, R_{ipt} is the return of individual stock *i* during the interval *p* of trading day *t*, and R_{mpt} indicates the return of NIFTY 50 Index at the interval *p* of trading day *t*. The liquidity adjusted Capital Asset Pricing Model advocated by Acharya and Pedersen (2005) postulates that $\beta 1_{it}$ ought to be related positively to the expected security returns. It implies that if the changes in liquidity of securities are negatively commoved with the liquidity of the market, such securities will trade at a premium in the market. Contrarily, $\beta 2_{it}$ and $\beta 3_{it}$ are suggested to be negatively correlated to the returns expected by the investor.

The three betas explained above follows the realised beta logic as expressed by Andersen, Bollerslev, Diebold, and Wu (2006) as follows:

$$\hat{\beta}_{it} = \frac{\sum_{p=1}^{N_t} R_{ipt} R_{mpt}}{\sum_{p=1}^{N_t} R_{mpt}^2} \qquad (4)$$

Here the numerator indicates the covariance between the return of the market and that of individual security, and the denominator explains the realised volatility of the market.

Further, the study measures two additional betas, similar to Acharya and Pedersen (2005) as follows:

$$\beta^{liqnet}{}_{it} = \beta 1_{it} - \beta 2_{it} - \beta 3_{it} \qquad (5)$$

$$\beta^{net}{}_{it} = \beta_{it} + \beta 1_{it} - \beta 2_{it} - \beta 3_{it} \qquad (6)$$

Here, $\beta^{liqnet}{}_{it}$ refers to a liquidity net beta that brings out a linear combination of the three liquidity betas excluding market beta. It enables to differentiate the impact of liquidity risks on the pricing of securities from that of market risk. $\beta^{net}{}_{it}$ provides a net beta that comprises of all the four covariance terms, where β_{it} refers to the market beta as posits by CAPM constructed using equation (4).

EMPIRICAL RESULTS AND DISCUSSIONS

The Principal Component Analysis

Principal Component Analysis (PCA) is carried out for the innovations in liquidity measures at the market level which is then extended to security level to bring out more comprehend principal components based of the nature of measures. The first principal components are found to be significantly comprehending the characteristics of the innovations in different groups of measures, viz. cost, quantity and multidimensional. Therefore, for further analysis, the liquidity innovations derived from the first principal components under each category of measures are employed. They are

named as innovations in spread, innovations in quantity, and innovations in multidimensional measures. Innovations in the number of transactions are used as such indicating time dimension in the analysis.

Pricing of Innovations in Liquidity Measures in Indian Stock Market

The present study analyses whether liquidity risk as established by the innovations in liquidity is priced in Indian stock market. It examines how liquidity risk affects expected returns. This is carried out by running cross-sectional regressions on the data using a GMM framework that takes into account the pre-estimation of betas (Cochrane, 2001). Standard errors are computed using the Newey and West (1987) method with two lags.

By employing the returns of individual securities along with the betas estimated using innovations in liquidity measures, the cross-sectional regression models are estimated for the study period. The estimates of such cross-sectional regressions for the impact of innovations in spread, innovations in quantity, innovations in number of transactions, and innovations in multidimensional measures on the pricing of security in Indian stock market are discussed below.

Pricing of innovations in spread

Innovations in spread explain the changes in individual security-level and market-wide cost dimensional measures of liquidity viz. quoted spread (S_t), proportional quoted spread (PS_t), effective spread (ESPR) and proportional effective spread (PESPR). Five betas are derived using these innovations in spread as discussed earlier, which are brought into a GMM framework to analyse the impact of innovations in spread on the pricing of stock in the Indian context. These innovations are considered as the liquidity risk arising out of changes in the cost dimension of liquidity. Table 1 reports the estimates of GMM.

Table 1. Cross-sectional Regressions: The Impact of Innovations in Spread on Security Prices

Panel A				***Adjusted R^2***
Intercept	$\beta 5_{it}$			0.09
-0.0102 (-1.39)	0.0606 (2.38)**			
Panel B				
Intercept	$\beta 4_{it}$			0.14
-0.0117 (-1.42)	0.09610 (1.91)*			
Panel C				
Intercept	$\hat{\beta}_{it}$	$\beta 5_{it}$		0.16

-0.0149 (-1.58)	0.03814 (0.62)		0.09827 (1.84)*		
Panel D					
Intercept	$\hat{\beta}_{it}$		$\beta 1_{it}$	$\beta 2_{it}$	$\beta 3_{it}$	0.20
0.0294 (0.91)	0.0406 (0.63)		0.09965 (2.21)**	-0.01019 (-0.48)	-0.01008 (-0.66)	

Source: Own survey.

Panel A of Table 1 reports the results of regression carried out by considering a single regressor viz. net beta which accounts for the realised standard market beta as well as the betas derived from innovations in spread. The results reported in Panel A of the Table prove that the net beta is priced in Indian stock market. This indicates that along with the traditional market risk component (standard beta), the liquidity risk arising out of innovations in the cost dimension of liquidity i.e. innovations in spread is having a significant positive impact in the price of securities in Indian stock market. However, the premium for such net beta incorporating market risk as well as liquidity risk arising from cost concerns is negligible.

Panel B depicts the premium in the price of a security for the net liquidity beta comprising of all the three liquidity betas derived from innovations in spread. It is found that the market offers a premium for the securities having liquidity concerns arising out of wider spreads leading to greater transaction costs. This premium is found to be greater than the premium offered for the net beta in Panel A.

Panel C exhibits the result of regression estimated detaching the effect of standard beta (market beta) on the security returns from that of net beta. It measures the distinct contribution of net beta to the pricing of the most active securities in Indian stock market. The results vindicate that the market beta got an expected sign as per the predictions of CAPM. However, it is found to be insignificantly priced in Indian stock market coinciding with the results of Fama & French (1992). It depicts that the market risk, as measured by standard market beta, fails in explaining the cross-sectional differences in asset returns. However, the net beta component comprising the features of standard beta as well as the liquidity betas resulting from innovations in spread is found to be significant with a positive premium. It can be inferred that the investor prefers a premium for holding securities that are risky in the cost dimension of their liquidity.

Panel D provides the coefficients of each of the liquidity risk measures along with the standard market beta. It shows that the liquidity beta arising out of covariance between innovations in market-wide spread and innovations in security-level spread ($\beta 1_{it}$) is significantly priced in Indian stock market. It indicates that the investor demands excess returns for holding securities whose innovations in spreads co-moves with the market and fluctuates in disproportionately higher terms responding to the market volatility. However other two betas derived from innovations in spread, $\beta 2_{it}$ and $\beta 3_{it}$ are not influencing the price of securities in Indian stock market. It can be understood that the innovations in spread at individual security level or that at the market level alone are not affecting the pricing of a security, but

it is the co-movement in the liquidity risk arising out of wider spreads in the individual securities and the market as a whole demands for the premium in the price of a security in the Indian context. Confirming Panel C, $\hat{\beta}_{it}$, which is the standard market beta is not found to be playing a significant role in determining the price of a security in Indian stock market, when the innovations in spread or the liquidity risk arising out of cost-related aspects are incorporated in the model. Thus, similar to the findings of Dunne, Moore, and Papavassiliou (2010), it can be concluded that the investor in Indian stock market expects a premium for securities that are exhibiting wider spread or higher transaction costs when the whole market exhibits a similar scenario.

Pricing of innovations in quantity

The changes in security-level and market-wide quantity dimensional measures of liquidity viz. turnover (V_t), depth (D_t) and value depth (VD_t) are combined to form the innovations in quantity. This section explains the role of such innovations in quantity in the pricing of securities in Indian stock market. Cross-sectional regressions are employed in a GMM framework to examine the impact of innovations in quantity or the liquidity risk arising out of changes in the quantity dimension of liquidity on the pricing of security in Indian stock market. The estimates of GMM are presented in Table 2.

Panel A of Table 2 sums up the results of cross-sectional regression carried out by employing a single regressor, i.e. net beta. The net beta as represented by $\beta 5_{it}$ takes into account the market risk component along with the liquidity risk arising out of fluctuations in the quantity dimension of liquidity. The results show that despite negligible premium offered the net beta is significantly priced in Indian stock market. It reveals that the investor expects a premium for holding securities that have market risk as well as the risk of illiquidity hailing from abnormal fluctuations in the market depth.

Panel B exhibits the average premium that an investor expects to have for holding security which is having a net liquidity risk arising out fluctuations in the quantities traded in the market. It is found that the investor expects a significant premium for holding the securities having significant innovations in quantity.

Panel C reveals the result of regression estimated removing the effect of market beta on the stock returns from the impacts of the net beta. The results show that, as in the case of liquidity risk arising out of wider spread, the investors are not bothered about the premium for bearing the market risk alone, but demands for a significant premium for bearing additional risk of liquidity arising from unexpected changes in the quantities of securities traded in the market along with the market risk.

Table 2. Cross-sectional Regressions: The Impact of Innovations in Quantity on Security Prices

Panel A	***Adjusted R^2***

Intercept	$\beta 5_{it}$				0.06
0.1741 (1.89)	0.00921 (1.72)*				
Panel B					
Intercept	$\beta 4_{it}$				0.11
0.2347 (1.60)	0.008540 (2.08)**				
Panel C					
Intercept	$\hat{\beta}_{it}$	$\beta 5_{it}$			0.07
0.2479 (1.58)	0.0649 (0.62)	0.006610 (1.69)*			
Panel D					
Intercept	$\hat{\beta}_{it}$	$\beta 1_{it}$	$\beta 2_{it}$	$\beta 3_{it}$	0.15
0.20621 (1.96)	0.0718 (0.89)	0.007284 (2.61)***	-0.00287 (-1.04)	-0.00136 (-0.78)	

Source: Own survey.

From the Panel D, it can be derived that it is the disproportionate fluctuations in the quantity of particular security transacted in the market in response to the fluctuations in market volume contributes to the pricing of innovations in quantity in Indian stock market. Investors are not expecting significant premiums for holding securities whose returns are co-moving with the market-wide innovations in quantity or whose innovations in quantity are co-moving with market returns. The results confirm that the investors are not demanding premiums for market risk as well. However, it reassures that the common investors expect a premium for holding securities that are having greater innovations in quantity.

Pricing of innovations in number of transactions

Innovations in the number of transactions refer to the changes in the number of transactions between two given time intervals at the security level as well as market level. This section explains the impact of innovations in number of transactions on the pricing of securities in Indian stock market. Table 3 reports the results of the cross-sectional regression models estimated to analyse the impact of innovations in number of transactions or the liquidity risk arising out of changes in the time dimension of liquidity on the pricing of security in Indian stock market.

Panel A of Table 3 shows that the net beta comprising of the market risk component and the liquidity risk arising out of the innovations in number of transactions is significantly priced in Indian stock market. Even though it demands a negligible premium in the price of the security, it can be inferred that the common investors in the Indian market demands a premium for holding securities that have market risk as well as the risk of illiquidity arising out of innovations or unexpected changes in the number of transactions.

Table 3. Cross-sectional Regressions: The Impact of Innovations in Number of Transactions on Security Prices

Panel A					***Adjusted R^2***
Intercept	$\beta 5_{it}$				0.03
-0.0269	0.00173				
(-0.78)	(2.17)**				
Panel B					
Intercept	$\beta 4_{it}$				0.12
-0.0148	0.00199				
(-1.09)	(1.74)*				
Panel C					
Intercept	$\hat{\beta}_{it}$	$\beta 5_{it}$			0.07
-0.0197	0.02479	0.00167			
(-0.61)	(1.49)	(1.65)*			
Panel D					
Intercept	$\hat{\beta}_{it}$	$\beta 1_{it}$	$\beta 2_{it}$	$\beta 3_{it}$	0.15
0.0327	0.01280	0.00368	-0.00418	-0.00964	
(2.37)	(1.27)	(1.86)*	(-0.70)	(-1.21)	

Source: Own survey.

From Panel B, it can be inferred that the investors specifically demand a premium for holding securities whose innovations in number of transactions greatly co-moves with the innovations in market-wide number of transactions. Panel C reveals that, as in the case of liquidity risk arising out of innovations in quantity, the investors are not concerned significantly for having a premium for bearing only the market risk alone. However, it can be seen that they demand a significant premium as a return for bearing the additional risk of liquidity arising from unanticipated changes in the number of transactions per unit time in response to that in the market besides the market risk.

Panel D exhibits that it is the co-moving innovations or unexpected changes in the number of transactions per unit time of security with that of the market funds to the pricing of innovations in number of transactions in Indian stock market. Similar to the earlier cases, the investors are not found to be expecting any significant premiums for holding securities whose returns are co-moving with the market-level innovations in number of transactions or whose innovations in number of transactions are co-moving with market returns. The results endorse that the common investors expect a premium for holding securities that are having greater innovations in number of transactions rather than for the mere market risk.

Pricing of innovations in multidimensional aspects of liquidity

The changes in security-level and market-wide multidimensional measures that encompass the cost, quantity and time dimensions of liquidity viz. quote slope (QS_t), log quote slope ($LnQS_t$), composite liquidity (CL_t), Amihud measure (AMR), and flow ratio (FR) are pooled to form the innovations in multidimensional measures. Table 4 reports the estimates of GMM carried out using the betas estimated from the innovations in multidimensional measures.

Table 4. Cross-sectional Regressions: The Impact of Innovations in Multidimensional Aspects of Liquidity on Security Prices

Panel A					***Adjusted R^2***
Intercept	$\beta 5_{it}$				0.14
0.0199 (2.09)	0.0167 (3.98)***				
Panel B					
Intercept	$\beta 4_{it}$				0.12
0.01548 (2.14)	0.0261 (2.31)**				
Panel C					
Intercept	$\hat{\beta}_{it}$	$\beta 5_{it}$			0.09
0.0179 (3.90)	0.2565 (0.69)	0.0308 (1.71)*			
Panel D					
Intercept	$\hat{\beta}_{it}$	$\beta 1_{it}$	$\beta 2_{it}$	$\beta 3_{it}$	0.04
0.0148 (2.89)	0.01662 (0.42)	0.0639 (1.89)*	-0.0031 (-0.34)	0.0006 (0.87)	

Source: Own survey.

Panel A of Table 4 shows that the net beta comprising of the systematic market risk component and the liquidity risk arising out of the innovations multidimensional measures is significantly priced in Indian stock market. It confirms that the common Indian investor demands an excess return for holding securities that are having liquidity risk which may be arising out of cost, quantity or time aspects of liquidity along with the systematic risk of the market.

From Panel B, it can be reaffirmed that the investors explicitly demand a premium for holding securities whose liquidity movements (expected or unexpected) commoves with the liquidity of the market. Such commoving innovations can be raised out of cost, quantity or time aspect of liquidity, or from the combination of these aspects. Panel C discloses that, as in the case of innovations in individual aspects of liquidity, when the element of liquidity risk is incorporated, the investors are not concerned significantly for having a premium for bearing only the market risk alone. Nevertheless, they demand a significant premium for bearing the additional risk of liquidity

(illiquidity, more precisely) arising from unexpected fluctuations in different dimensions of liquidity of a stock responding to that in the market in addition to the market risk.

Panel D confirms that the co-movements between innovations in individual stocks liquidity and that of market liquidity are significantly priced in the Indian stock market. However, it is found that the investors are least bothered about having significant premiums for holding securities whose returns are co-moving with the market-level innovations in liquidity or whose innovations in liquidity are co-moving with market returns when the liquidity risk (it can be any dimension of liquidity risk) of individual stock is found to be responding significantly to the market-wide liquidity risk. The results thus, validate that the common investors expect a premium for holding securities that are having greater liquidity risk in association with market-wide liquidity risk rather than for the mere market risk.

CONCLUSION

The present study aimed at analysing whether liquidity risk is a priced factor in Indian stock market. A set of cross-sectional regressions are run in a Generalized Methods of Moments framework which test for the impact of liquidity risk as derived from liquidity innovations on the pricing of security in Indian stock market employing liquidity innovations from each dimension of liquidity as well as from a multidimensional aspect. The results provide that the liquidity risk is significantly priced in Indian stock market. It indicates that among the three betas calculated using liquidity innovations concerning different dimensions of liquidity, it is the liquidity risk arising out of co-movements between liquidity innovations of individual securities and that of the market alone is priced in the Indian stock market. It confirms that the Indian investor is concerned about the unexpected changes in liquidity of a security in response to the unexpected changes in liquidity of the market rather than the responsiveness of returns of individual securities to the innovations in the market or the reactions of innovations in the liquidity of individual securities to the market returns. Thus, it is the relative liquidity risk of a security that demands a premium in the Indian stock market.

Similarly, in line with Fama and French (1992), the study found that market risk is not priced when the component of liquidity risk is included in the market. Thus, this study points out that it is the liquidity risk for which an investor demands a premium rather than the systematic market risk. It indicates an increase in the anticipated value of security responding to the liquidity risk it bears and thus validates the liquidity-adjusted capital asset pricing model in the Indian stock market. The study suggests the investors consider these additional factors along with market risk while determining the anticipated return from security. It further proposes to have future research analysing the impact of the level of liquidity on determining the price of a security which was beyond the scope of this study, given that it is often the level of liquidity rather than the liquidity risk that affects the stock market the worst.

REFERENCES

Acharya, V. V., Pedersen, L. H. (2005). Asset pricing with liquidity risk. Journal of financial Economics, 77(2), 375–410.

Amihud, Y., Mendelson, H. (1986). Asset pricing and the bid-ask spread. Journal of financial Economics, 17(2), 223–249.

Amihud, Y., Mendelson, H. (1989). The Effects of Beta, Bid-Ask Spread, Residual Risk, and Size on Stock Returns. The Journal of Finance, 44(2), 479–486.

Amihud, Y., Hameed, A., Kang, W., Zhang, H. (2015). The illiquidity premium: International evidence. Journal of Financial Economics, 117(2), 350–368.

Andersen, T. G., Bollerslev, T., Diebold, F. X., Wu, G. (2006). Realized beta: Persistence and predictability. In Econometric Analysis of Financial and Economic Time Series (pp. 1–39). Emerald Group Publishing Limited.

Bekaert, G., Harvey, C. R., Lundblad, C. (2007). Liquidity and expected returns: Lessons from emerging markets. The Review of Financial Studies, 20(6), 1783–1831.

Brennan, M. J., Subrahmanyam, A. (1996). Market microstructure and asset pricing: On the compensation for illiquidity in stock returns. Journal of financial economics, 41(3), 441–464.

Chordia, T., Roll, R., Subrahmanyam, A. (2008). Liquidity and market efficiency. Journal of Financial Economics, 87(2), 249-268.

Cochrane, J. H. (2001). A rehabilitation of stochastic discount factor methodology (No. w8533). National Bureau of Economic Research.

Datar, V. T., Naik, N. Y., Radcliffe, R. (1998). Liquidity and stock returns: An alternative test. Journal of Financial Markets, 1(2), 203–219.

Donadelli, M., & Prosperi, L. (2012). On the role of liquidity in emerging markets stock prices. Research in Economics, 66(4), 320-348.

Dunne, P. G., Moore, M. J., Papavassiliou, V. G. (2011). Commonality in returns, order flows, and liquidity in the Greek stock market. The European Journal of Finance, 17(7), 577–587.

Fama, E. F., French, K. R. (1992). The cross-section of expected stock returns. The Journal of Finance, 47(2), 427–465.

Hansen, L. P. (1982). Large sample properties of generalized method of moments estimators. Econometrica: Journal of the Econometric Society, 1029–1054.

Hansen, L. P., Hodrick, R. J. (1980). Forward exchange rates as optimal predictors of future spot rates: An econometric analysis. Journal of political economy, 88(5), 829-853.

Hansen, L. P., Singleton, K. J. (1982). Generalized instrumental variables estimation of nonlinear rational expectations models. Econometrica: Journal of the Econometric Society, 1269-1286.

Hearn, B. (2010). Time varying size and liquidity effects in South Asian equity markets: A study of blue-chip industry stocks. International Review of Financial Analysis, 19(4), 242–257.

Lasfer, M. A., Melnik, A., Thomas, D. C. (2003). Short-term reaction of stock markets in stressful circumstances. Journal of banking & finance, 27(10), 1959–1977.

Lee, K. H. (2011). The world price of liquidity risk. Journal of Financial Economics, 99(1), 136–161.

Liang, S. X., Wei, J. K. (2012). Liquidity risk and stock returns around the world. Journal of Banking & Finance, 36(12), 3274–3288.

Newey, W. K., West, K. D. (1987). Hypothesis testing with efficient method of moments estimation. International Economic Review, 777–787.

Pástor, Ľ., Stambaugh, R. F. (2003). Liquidity risk and expected stock returns. Journal of Political economy, 111(3), 642–685.

ABSRJ · Advances in Business-Related Scientific Research Journal

geacollege Faculty of Entrepreneurship

IMPACT OF DIGITAL TRANSFORMATION ON KNOWLEDGE MANAGEMENT IN ORGANIZATION

Krešimir Buntak
University North, Croatia
kresimir.buntak@unin.hr

Matija Kovačić
University North, Croatia
matkovacic@unin.hr

Ivana Martinčević*
University North, Croatia
ivana.martincevic@unin.hr

Abstract

Changes in the organizational environment as an outcome require organizational changes. With the development of Industry 4.0, there is a need for digital transformation which is focused on digitizing business as well as in the automation of activities. To adapt the organization to the new conditions in an environment, it is necessary to develop organizational knowledge. Once created, knowledge should be managed and must be disseminated to all organizational levels. With the automatization of the organization system, there is a need for applying artificial intelligence that will manage implemented automated systems but will also manage created the base of knowledge. Furthermore, for the knowledge management organization may employ different models, but with the change in the organizational environments, there is a need for developing new models that will enable knowledge mining, management and dissemination of knowledge in the digital age. It is also necessary to mention security, which is crucial, as the digital age brings with it the challenge of being able to give others access to information in a violent way, which can violate the privacy and business secret of the organization.

Key Words

Industry 4.0; digital era; knowledge management; organizational environment.

*Corresponding Author

INTRODUCTION

Changes in organizational environments' have an impact on today's business paradigms. There is the emergence of a new type of economy that is based on digital technology. Digitalization and digital technology lead to changes in ways of communication in organizations and have an impact on business processes. Described forces drive a need for the digital transformation of the organization which implies implementation of cyber-physical systems, internet of things technology and the whole line of innovations.

Furthermore, described changes and need for digital transformation, today's organization's forces to develop new knowledge that will enable organizational adaptation to new requirements from environments. Organizational learning process means exchange of knowledge whit organizational environments and adjustment of current knowledge to organizational needs (Zbuchea, Vudu, 2018). Once acquired, knowledge must be managed to create and add value to product, service and organizational processes at all. Organizational knowledge is managed by processes that are focused on creation, dissemination and use of created knowledge. However, the use of knowledge depends on the competence of organization and competence of organizational employees at all (Sharma, 2005).

Digital transformation can be one of the foundations for organizations to create a competitive advantage in the market. Through the use of innovations of information-communication technologies, sharing and creating of organizational knowledge is made more effective and efficient. The organization can create a knowledge base within which can accumulate, and store created knowledge bud also can analyze that knowledge for different purposes. However, to the organizations are recommended for creation of a knowledge management system that will not be based only on the gathering and documentation of knowledge, but also on creating the relationship between the knowledge and its use to create value. Besides, the need to manage organizational knowledge is not only a consequence of changes in organizational environments but also results of the need for much better adaptation to future changes.

This paper aims to outline the most important concepts and to define the impact of the digital age on organizational knowledge management models. Furthermore, the paper aims to give an overview of the most important models that today's organizations can use to manage their knowledge, given the increasing demands placed on the organization by the stakeholders, ie the opportunities offered by the digital age.

METODOLOGY

This paper is based on a secondary survey conducted by relevant professional and scientific journals in journals such as WoS and Scopus. The secondary research included papers discussing digital transformation as

well as changes that occur through digital transformation in an organization. Furthermore, the research used papers that talk about and describe new and existing organizational knowledge management models as well as papers that describe the importance of developing an awareness of secure communication as the Internet becomes the dominant medium for communication and dissemination of information in the digital age.

Main aim of this research is to present impacts of digital transformation and digitalization of the bunnies to organizational knowledge and way organization manage its knowledge. Digitalization have many opportunities for the knowledge creation but there is also need for different approach to ensuring safety of generated knowledge.

REVIEW OF LITERATURE

Knowledge management is a discipline which is still in development, especially when come to the digital environment. Today's scientific papers that are talking about knowledge management are focused on benefits that an organization has from focusing on collecting, manage and dissemination of knowledge. Ghosh (2003) in his paper talking about the importance of libraries which are some kind of knowledge bases in physical form. In his research, Ghosh refers to the importance of customization to the new environmental condition's whit the implementation of new technologies (Ghosh, 2003). Gavrilova, Alsufyev, Kokoulina (2017) in their research are talking about the importance of organizational support that organizational have formed an informational technology (IT) in all processes that are related to knowledge management. Except for the importance of IT, Gavrilova, Alsufyev, Kokoulina concluded that every organization must ensure that strategic management is committed to defining goals and strategies that are related to collecting knowledge. Furthermore, there is identified an oversized focus of some organization to IT although the organization has a small maturity level of existing organizational knowledge (Gavrilova, Alsufyev, Kokoulina, 2017). Digital transformation, on today's organizations, sets a request and challenges that are related to the safety of organizational knowledge. Ilvonen, Thalmann, Manhart, Sillaber (2018) emphasize that ensuring the safety of organizational knowledge is one of the biggest challenges with whom organizations are facing today. They emphasize the need for developing models of securing organizational knowledge and security-related threats that are coming from organizational environments. Because of this fact, organizations must include experts from different areas to the development of the security model (Ilvonen, Thalmann, Manhart, Sillaber, 2018). With the gathering of large amounts of data, there are challenges related to defining how collected data will be managed. Given this need, Grigorov, Georgiev, Petrov, Varbanov, Stefanov (2009) explore various possibilities that are different information systems offering and recommend that information system should have three levels of access, public, limited private and shared access (Grigorov, Georgiev, Petrov, Varbanov, Stefanov, 2008).

Given the fact that organizational knowledge stems from organizational changes and adapt to the environment, Mizintseva and Gerbina (2018) talk about the need to create organizational knowledge so that the organization can develop and holistically approach to the digital transformation of business (Mizintseva, Gerbina, 2018). On the other hand, Schwarzmüller, Bros, Duman, Welpe (2018) write about several changes affecting the organization, resulting in the need for the digitization and digital business transformation. Changes in the environment are resulting in need of a different kind of competence that is required for the employees that work in the organization and which is related whit creativity in the process of problem resolution (Schwarzmüller, Bruce, Duman, Welpe, 2018). One of the technologies that enable collecting and generating organization knowledge is big data. Big data is the base of information that organization are generated and collecting in processes. Whit mining techniques, an organization can identify knowledge from big data and used it for different purposes.

INDUSTRY 4.0 AND DIGITAL TRANSFORMATION

The concept of Industry 4.0 was first mentioned in 2011 in the context of the German development strategy until 2020. Industry 4.0 involves the use of technologies such as RFID (Radio-frequency identification), IoT (Internet of Things), artificial intelligence (AI), big days, sensor, CPS (Cyber-physical system), etc. The use of such technologies requires a digital transformation of the organization. Digital transformation involves replacing the traditional approach to business with new digital models, which can affect the efficiency, effectiveness and economy of the entire organization (Vial, 2019). As such, digital transformation is significantly changing customer expectations. Customers, because of the ability for an organization to personalize products, place demands on the organization related to the development of new products and services, as well as the development of innovative ways of meeting their requirements (Verhoef, et al., 2019). With increasing demands from organizational environments and the rapid changes that result from the emergence of new technologies, the organization must develop new mechanisms to adapt to the new conditions. By adapting, the organization creates organizational knowledge that can result in the development of competitiveness in the long run.

However, the digital transformation, as well as the use of technologies that use an Internet connection for communication, is a challenge related to the unauthorized use of information that may become available to third parties. Therefore, it is necessary to implement mechanisms that will increase security, but also help to retain once collected information stored in databases (Şerbu, Rotariu, 2015). One way to increase security is to implement an information security management system and its certification to ISO 27001. European Union countries (Tankard, 2016).

The implementation of new technologies, as a consequence, also has increasing demands placed on organizational employees in terms of their

competencies. New technologies also mean the need for organizational employees to acquire new knowledge and skills to stay and become competent to perform tasks and activities (Nyikes, 2018). Furthermore, it is necessary to mention the role that modern technology, such as virtual and augmented reality, plays in educating employees and expanding their knowledge, that is, disseminating the knowledge gathered in the organization. When it comes to dissemination of knowledge, it is necessary to mention both cloud computing and its use in the organization for the dissemination of information and knowledge. Specifically, cloud computing provides access to the collected knowledge, that is, the information gathered through the possibility that all employees who have permission can access and use the organizational knowledge collected.

IMPORTANCE OF INFORMATION SAFTY IN DIGITAL ERA

Industry 4.0 offers organizations many benefits related to increasing the efficiency and effectiveness of organizational processes, but it also brings with it many challenges, such as the security of information stored in databases. Cyber attacks on organizations are becoming more sophisticated, and the risk of new attacks is increasing. As such, cyber attacks can result in information theft as well as theft of trade secrets, which can endanger the existence of an organization, or impair its business continuity (Pereira, Barreto, Amaral, 2017). This implies the importance of identifying and mapping risks as well as defining the measures by which risks will be nullified. Cyber attacks can also result in the theft of organizational knowledge, which can jeopardize the competitive advantage of organizations. Information security is of particular importance for all organizations that store information about their customers, that is, customers, as well as information that is collected from the process, and the organization plans to use it to analyze and create organizational knowledge (Hutchins et al., 2015). Networking organizations face the particular challenge of securing information, which means they may or may not share the knowledge they have with stakeholders involved in the network. However, stakeholders involved in the network may abuse their position and may gain access to organizational knowledge through cyber-attacks or other mechanisms, which for the organization means a risk that must be abolished (Marabelli, Newell, 2012).

MODELS OF KNOWLEDGE MANEGMENT IN ORGANIZATIONS

Need for development of a new model for knowledge management arises from the requirement for increasing organization efficient and effective. Organizational management is in constant search for new model's whit help of whom will be possible to use existing organizational knowledge for organizational growth and development. Parallel whit raising organizational needs for models for managing knowledge, many models are developed

which are focused on different things (Hacienda, Sarinah, 2009). Furthermore, models for organizational knowledge management allows the dissemination of existing knowledge to all organizational levels. In turbulent conditions of organizational environment, it is imperative to adopt the model for knowledge management because knowledge is one of the factors that is correlated with the ability of the organization to survive those turbulences (Mohajan, 2017). Which model will organization choose depends on organization needs and existing strategy for knowledge management (Hoagie, Kingston, 2003).

Nonaka, Takeuchi (1995) in their paper in which is described research made in Japan in 1995 identified that in the organization are existing two types of knowledge, explicit and implicit. They conclude that an organization's success depends on mechanical processing of collected explicit knowledge. Furthermore, they described that process of creating organizational knowledge is determined whit four factors: socialization, externalization, combination and internalization. These are factors that affect transforming implicit knowledge in explicit through dialogue and communication, linking new knowledge with existing one, learning whit doing things and working in teams (Tavakoli, Gandomani, 2016). Implicit knowledge is intuitive knowledge of employees, and it is neither defined nor documented, while explicit knowledge is clearly documented and easily accessible to everyone in the organization. Takeuchi emphasizes that regardless of the source from which knowledge is gathered it is the basis for the development of innovation (Takeuchi, 2006). There are some similarities between models that are presented from Boisot (1987) and Nonaka and Takeuchi (1995). Boisot in his paper speaks of a codified and unqualified knowledge that is consistent with the explicit and implicit knowledge represented by Nonaka and Takeuchi. Both models assume the expansion of knowledge through all levels of the organization (Haslinda, Sarinah, 2009).

Although the transfer of knowledge in an organization is a complex process that assumes that knowledge differs depending on the employee's career stage and can be divided into individual, group, organizational and inter-organizational relationships that relate to the knowledge of partners, suppliers, competitors and other (Haslinda, Sarinah, 2009). So, the level of knowledge depends on career development, and such knowledge as can be articulated and tacit. In the existing literature, many authors do not clearly define the concepts of storage, transformation and transfer, which are clearly defined in the model that is represented by Hedlund (1994). Furthermore, the same the model describes three fundamental concepts, articulation and internalization of knowledge, expansion and appropriation of knowledge or assimilation and dissemination of acquired knowledge. Assimilation of knowledge refers to the collection and adoption of knowledge from the environment, which can be a two-way process and is linked to career development. Dissemination refers to the expansion of knowledge outside the organization, while the processes of articulation, dialogue, reflection and internalization occur between articulate and tacit knowledge at different career stages (Hedlund, 1994).

It is important to say how tacit and articulated knowledge is considered intellectual capital in organizations. A model that is represented by Skandia considers the model that is developed for measuring the level of existing intellectual capital in organizations. The focus of the model is on the establishment of equality between buyers, suppliers and innovations. Therefore, this model is depending on these components; structural, human and buyer. In model is described how the market value of an organization depends on the level of intellectual capital in an organization which is determinate by organizational employees. Structural capital is determinate by the capital of buyers and organizational capital is the determinate whit capital of inventions and processes (Hacienda, Sarinah, 2009). Organizational focus on intellectual capital allows organizational development and growth as well as the growth of organizations market value which depends on goodwill. In other words, investments in the development of organizational intellectual capital determinate faster growth of organizational market value (Edvinsson, 1997).

Demerst model of knowledge management point that organizational knowledge is made in organizations, and once made, knowledge is embodied in the organization. Scientific paradigms determinate creating of organizational knowledge parallel whit impact of the paradigm of society. Creating knowledge is an interactive process which is constantly embodied in the organization and through an organization is disseminated. Result of creating management knowledge is seen through the emancipation of employees, which determines many of the benefits for the organization (Haslinda, Sarinah, 2009). On the other hand, Frids model of knowledge management is talking about the maturity of knowledge level and may bring down to five levels; chaotic state, the state in which an organization recognizes organizational knowledge, the degree in which the organization is focused on knowledge, the degree in which the organization is guided by the knowledge and the last degree in which the knowledge is in the organization centre (Caganova, Szilva, Bawa, 2015). Stankosky and Baldanza (2001) identified several factors that are classified as factors that enable organizational knowledge and they are learning, leadership, organizational structure and culture and technology. However, the authors emphasize that knowledge creation is not only influenced by such factors, but also whit disciplines such as strategic planning, finance, psychology, economics, engineering, etc. (Haslinda, Sarinah, 2009). Descriptive models are just some of the models that enable organizations to manage the created knowledge. However, under the influence of industry 4.0 and digital transformation, existing organizational knowledge management models have to adapt to newly defined requirements.

KNOWLEDGE IN DIGITAL ERA

To ensure the growth and development of the organization as well as its sustainability, it recommends to the organization to create and implement some of the models for knowledge management. Different knowledge

management models focus on different aspects, and the type of model the organization will implement depends on the type and characteristics of the organization (Mohajan, 2017). Particular attention should be paid to the strategic knowledge management that can provide the possibility of adapting the organization to new requirements in a turbulent environment. One of the challenges facing today's organizations, driven by changes in the environment, is needed for developing new knowledge that is based on IT and which today's entrepreneurs and owners of organizations must have (Sousa, Rocha, 2019). The importance of the existence of an information system within an organization that will enable communication of acquired knowledge and data protection in an implemented information system is constantly emphasized because organizational knowledge can be a competitive advantage (Kushwaha, Tripathi, Chauhan, Saxena, 2017).

Industry 4.0 and its related innovations determinate development of new systems that enable organizations to efficiently manage their knowledge as well as possible to collect new knowledge. Development of technological innovations in organizational knowledge management faces challenges that are associated with the ability to identify data from different locations within the organization, the ability to collect data of the machine performance, as well as on the activities that employees perform on machines, optimize data collection and initial processing of collected data (Rot, Sobinska, 2018). Digitalization and technological innovations become an essential component of today's organizations and directly affect the management processes in the organization. Newly created technological innovations enable organizations to achieve much greater flexibility in decision making than organizations that have not been digitized (Kaivo-oja, Virtanen, Jalonen, Stenvall, 2015).

here is not enough scientific and professional research that could contribute to the identification of the impact that digital business transformation has on managing and generating knowledge in the organization. Furthermore, networking in the organization and the use of sensors is enabling the collection of a large number of data from which is possible to identify and create organizational knowledge (Zhou, Alexandre-Bailly, Piramuthu, 2016). The growing need for a transformation of the traditional knowledge-based economy to an innovation-based economy is identified (Meško, Suklan, Roblek, 2017). However, it is important to emphasize that the innovation-based economy cannot be acquired without organizational knowledge which is possible to collect and improve it whit digital technologies. Digital technologies enable management of created knowledge bases, extraction of knowledge from databases, dissemination of knowledge as well as analysis of acquired knowledge (Zbuchea, Vudu, 2018). Besides, digital technologies and more accurately networking in the organization enable better communication and transfer of acquired knowledge. Research has shown that the creation of communication networks in the organization can be a significant cost, but can, in the long run, lead to significantly higher profits (Vladova, Ullrich, Bahrs, Bender, 2018).

ORGANIZATIONAL KNOWLEDGE AND ARTIFICIAL INTELLIGENCE

Digital transformation implies the implementation of expert systems as well as automated systems that are based on artificial intelligence. Artificial Intelligence in the last few years is mentioned as one of how tacit organizational knowledge can be identified and transformed into clearly defined knowledge. However, the issue of artificial intelligence in organizations is not strictly related to its use only within expert systems, but also in automated activities. As such, artificial intelligence cannot now contemplate the context of certain activities delegated to it that can result in a possibility of harming the organizational environment (Sanzogni, Guzman, Busch, 2017). The question is whether artificial intelligence can really replace the intelligence and knowledge of people and also there is a question that is related to the risk to people if artificial intelligence begins to carry out activities that people have done so far. In practice, artificial intelligence is beginning to be applied in healthcare where is serving in expert systems that assist medical personnel in making decisions (Furmankiewicz, Sołtysik-Piorunkiewicz, Ziuziański, 2014).

Furthermore, there is not yet a sufficiently well-designed artificial intelligence system that could communicate with people. However, existing knowledge management systems implemented some form of artificial intelligence that allows a variety of functions, such as mining knowledge (Tsui, Garner, Staab, 2000). Implementing of artificial intelligence into organizational knowledge management systems is imperative because of the functions that knowledge management systems have and must do, often requiring complex activities (Birzniece, 2011). Birzniece (2011) On the other hand, linking the knowledge base to artificial intelligence allows easier programming such systems and setting up algorithms to perform activities almost without the intervention of organizational employees. In other words, updating operating instructions makes it easier to define automated system settings that will upgrade existing activities performing. The application of such systems will be emphasized concerning the development and focus on the development of the cognitive computing that integrates many functions within it, such as learning automated systems, motion recognition, speech recognition etc.

KNOWLEDGE MINING AND BIG DATA

By implementing technological innovations like sensors in organizations, the organization collects a large amount of data that is stored in the database. For collected data, there is a need for analysis, so data can be used for making decisions (Ruzgas, Jakubėlienė, Buivytė, 2016). From the database, it is possible to extract and identify organizational knowledge using mining techniques. In this context, knowledge identification techniques are divided into a data classification, which means grouping data in individual groups from which it will be possible to identify knowledge, create a cluster of data, then classify data in the same group, and finally create a conditional

formatting to identify whether there is a link or correlation between individual data (Silwattananusarn, Tuamsuk, 2012). In addition to this, there are several different ways to identify knowledge from big data, which primarily depend on the type of data being processed (Fayyad, Piatetsky-Shapiro, Smyth, 1996). Big data and data mining techniques can be useful when it comes to using identified data for quality improvement, production planning, process improvement, etc. (Cheng, Chen, Sun, Zhang, Tao, 2018). However, data mining should not only be seen from the aspect of generating knowledge from big data, but also from gathering existing knowledge hidden in organizations, due to insufficiently well-articulated communication between employees, that is, the insufficient commitment of management to documenting and gathering knowledge.

CONCLUSION

Digital transformation of organizations becomes imperative due to changes and innovations that arise from the development industry 4.0. Along with that and by increasing the complexity of the organizational environment, organizations are forced to adapt to new conditions. By adjusting to the new requirements, organizations acquire new knowledge based on which they can develop a competitive advantage on the market or differentiate themselves from the competition.

There is a deficit of research that would cover a digital area of organizational knowledge management. Furthermore, the organization's knowledge that is acquired must be managed. Existing organizational knowledge management models must adapt to new conditions. Organizations need to define new models that will gather organizational knowledge, given the fact that digital transformation enables organizations to apply new technologies for dissemination of organizational knowledge across all organizational levels as well as automated systems that are often based on artificial intelligence. Furthermore, because of the increasing risks of cyber-attacks, there is also a need for implementing risk identification and risk management model in the model of knowledge management. This kind of approach can increase the safety of generated knowledge.

Industry 4.0 for organizations means many different advantages and opportunities associated with increasing the efficiency and effectiveness of organizational processes as well as the ability to create organizational knowledge using artificial intelligence. But on the other hand, there are many challenges associated with securing once-created knowledge, since digitizing organizational knowledge and storing it in databases, consequently, has the risk of cyber-attacks that can compromise the security of organizational knowledge as well as the privacy of customers and users. The organization must implement measures that will ensure the safety of all customer information to keep costumers and all interested parties satisfied.

Organizational growth and development are based on organizational knowledge that needs to be adapted to new conditions. It should also be noted that the knowledge profile of organizational staff changes because the

activities carried out in organizations often automate, which means they need to develop the competencies of organizational staff that will enable them to manage such systems. Organizations are encouraged to create a knowledge base as well as disseminate knowledge generated according to the needs at different organizational levels to enable the foundation of competitive advantage and improve organizational performance.

The main conclusion of the research is the need of creating a new model for the knowledge management because existing models are not good enough to satisfy new requirements that are related to the challenges like possibilities of cyber-attacks etc. A new model of knowledge management must include also the possibilities to create organizational knowledge through the usage of new technologies that arrives form development of Industry 4.0. Furthermore, whit the usage of such innovations organization can disseminate once created knowledge thought the internet connection and cloud computing.

REFERENCES

Birzniece, I. (2011). Artificial intelligence in knowledge management: Overview and trends. Scientific Journal of Riga Technical University. Computer Sciences, 5–11.

Caganova, D., Szilva, I., Bawa, M. (2015). Application of Frid's knowledge management model to an industrial enterprise. Applied Mechanics and Materials, 16–23.

Cheng, Y., Chen, K., S. H., Z. Y., Tao, F. (2018). Data and knowledge mining with big data towards smart production. Journal of Industrial Information Integration, 1–13.

Edvinsson, L. (1997). Developing intellectual capital at Skandia. Long range planning, 366-373.

Fayyad, U., Piatetsky-Shapiro, G., & Smyth, P. (1996). From data mining to knowledge discovery in databases. AI magazine, 37–54.

Furmankiewicz, M., Sołtysik-Piorunkiewicz, A., Ziuziański, P. (2014). Artificial intelligence systems for knowledge management in e-health: the study of intelligent software agents. Latest Trends on Systems: The Proceedings of 18th International Conference on Systems, 551-556.

Gavrilova, T., Alsufyev, A., Kokoulina, L. (2017). Knowledge Management Trends in the Digital Economy Age. International Conference on Digital Transformation and Global Society, 464–473.

Ghosh, M. (2003). Knowledge management in the digital age: challenges and opportunities in India.

Grigorov, A., Georgiev, A., Petrov, M., Varbanov, S., Stefanov, K. (2008). Building a knowledge repository for life-long competence development. TENCompetence Workshop.

Haggie, K., Kingston, J. (2003). Choosing your knowledge management strategy. Journal of Knowledge Management Practice, 1–20.

Haslinda, A., Sarinah, A. (2009). A review of knowledge management models. Journal of international social research, 187–198.

Hedlund, G. (1994). A Model of Knowledge Management and the N-Form Corporation. Strategic Management Journal, 73–90.

Hutchins, M. J., Bhinge, R., Micali, M. K., Robinson, S. L., Sutherland, J. W., & Dornfeld, D. (2015). Framework for identifying cybersecurity risks in manufacturing. Procedia Manufacturing, str. 47–63.

Ilvonen, I., Thalmann, S., Manhart, M., Sillaber, C. (2018). Reconciling digital transformation and knowledge protection: a research agenda. Knowledge Management Research & Practice, 235-244.

Kaivo-oja, J., Virtanen, P., Jalonen, H., Stenvall, J. (2015). The effects of the internet of things and big data to organizations and their knowledge management practices. International Conference on Knowledge Management in Organizations, 495–513.
Kushwaha, P., Tripathi, R., Chauhan, S., Saxena, R. (2017). Exploring the Role of Knowledge Sharing in Digital Era: A Conceptual Study. Digital Transformation of Business in India: Opportunities and Challenges.
Marabelli, M., & Newell, S. (2012). Knowledge risks in organizational networks: The practice perspective. The Journal of Strategic Information Systems, 18–30.
Meško, M., Suklan, J., Roblek, V. (2017). The Impact of the Internet of Things to Value Added in Knowledge-Intensive Organizations. Knowledge Management Strategies and Applications, 169-.
Mizintseva, M., Gerbina, T. (2018). Knowledge Management: A Tool for Implementing the Digital Economy. . Scientific and Technical Information Processing, 40–48.
Mohajan, H. (2017). The Impact of Knowledge Management Models for the Development of Organizations. Journal of Environmental Treatment Techniques, 12–33.
Nyikes, Z. (2018). Digital competence and the safety awareness base on the assessments results of the Middle East-European generations. Procedia Manufacturing, str. 916–922.
Pereira, T., Barreto, L., & Amaral, A. (2017). Network and information security challenges within Industry 4.0 paradigm. Procedia Manufacturing, str. 1253–1260.
Rot, A., Sobinska, M. (2018). The Potential of the Internet of Things in Knowledge Management System. Position Papers of the 2018 Federated Conference on Computer Science and Information Systems, 63–68.
Ruzgas, T., Jakubėlienė, K., Buivytė, A. (2016). Big Data Mining and Knowledge Discovery. Journal of Communications Technology, Electronics and Computer Science, 5–9.
Sanzogni, L., Guzman, G., Busch, P. (2017). Artificial intelligence and knowledge management: questioning the tacit dimension. Prometheus, 37–56.
Schwarzmüller, T., Brosi, P., Duman, D., & Welpe, I. (2018). How does the digital transformation affect organizations? Key themes of change in work design and leadership. mrev management revue, 114–138.
Şerbu, R., Rotariu, I. (2015). Privacy Versus Security in the Internet Era. Procedia economics and finance, str. 73–76.
Sharma K, A. (2005). Knowledge management in the digital. Digital information resources and network on India, 163–169.
Silwattananusarn, T., Tuamsuk, K. (2012). Data mining and its applications for knowledge management: a literature review from 2007 to 2012. International Journal of Data Mining & Knowledge Management Process, 13–24.
Sousa, M., Rocha, Á. (2019). Strategic Knowledge Management in the Digital Age. Journal of Business Research, 223–226.
Takeuchi, H. (2006). The new dynamism of the knowledge-creating company. Knowledge Economy, 1–10.
Tankard, C. (2016). What the GDPR means for businesses. Network Security.
Tavakoli, Z., Gandomani, T. (2016). Adaptation of Nanoka's and Takeuchi's knowledge management model to Scrum roles. International Journal of Software Engineering and Technology, 16–19.
Tsui, E., Garner, B., Staab, S. (2000). The role of artificial intelligence in knowledge management. Knowledge based systems, 235–239.
Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., Haenlein, M. (2019). Digital transformation: A multidisciplinary reflection and research agenda. Journal of Business Research.
Vial, G. (2019). Understanding digital transformation: A review and a research agenda. The Journal of Strategic Information Systems.
Vladova, G., Ullrich, A., Bahrs, J., Bender, B. (2018). Digitalisation and enterprise knowledge (net) working. Strategica, 696–704.
Zbuchea, A., Vudu, C.-M. (2018). Knowledge Management in the Digital Era. Strategica, 696–704.
Zhou, W., Alexandre-Bailly, F., Piramuthu, S. (2016). Dynamic organizational learning with IoT and retail social network data. Hawaii International Conference on System Sciences, 3822–3828.

THE MEDIATING ROLE OF NETWORKING ORIENTATION BETWEEN ENTREPRENEURIAL PERSONALITY CHARACTERISTICS AND ENTREPRENEURIAL INTENTIONS

Ayaz Ali Maitlo
Shah Abdul Latif University, Pakistan
ayazalimaitlo@gmail.com

Salman Bashir Memon*
Shah Abdul Latif University, Pakistan
salman.memon@salu.edu.pk

Mahendar Kumar
Greenwich University, Pakistan
mahendarbajaj101@gmail.com

Abstract

The literature suggest that there is an existence of networking orientation relationship with respect to personality characteristics and entrepreneurial intentions, and that has been tested in different settings but, this paper has examined the mediating relationship of networking orientation with respect to personality characteristics that lead towards entrepreneurial intentions in the context of Sindh Province, Pakistan. Hence, the six personality characteristics are taken as independent variables with respect to entrepreneurial intentions mediated by networking orientation. It is found that locus of control, propensity to take risk, need for achievement and innovativeness has shown positive and significant relationship but self-confidence and tolerance to ambiguity has shown significant but negative relationship. The data collected from 250 shopkeepers, those having maximum five employees belonging to three cities Khairpur Mir's, Sukkur and Shikarpur Sindh. The researcher then tested hypothesized theoretical model by employing Structural Equation Model (SEM). Ultimately, it implies through this study that entrepreneurs have to focus on networking orientation because this can contribute positively in enhancing entrepreneurial intentions as predicted by personality characteristics of entrepreneurs.

Key Words

Entrepreneurial personality characteristics; entrepreneurial intentions; networking orientation; small scale business; structural equation model.

INTRODUCTION

*Corresponding Author

Entrepreneurship is as old as the idea of doing business for the profit but, the proper definition and understanding of the term and its application was started to be understood through the lens of political economy that emerged as a result of sematic work done by Adam Smith through his "Nature and Causes of the Wealth of Nations" in 1776. It was then entrepreneur, who was considered to be an agent accumulating resources and combining them in a way that generates profit and contribute into the economy through reinvestment and jobs creation. But, he didn't call that agent an entrepreneur precisely; but, French author Richard Cantillon in 1755 through his notable essay "*Essai sur la nature du commerce en general*" considered entrepreneur as the central actor of the economic process. However, later on in 20th century, the concept of entrepreneurship was further divided into two broader perspectives: Schumpeterian entrepreneur and Kirznerian entrepreneur.

An entrepreneur is someone who pursue and recognizes an idea or opportunity and putting those useful ideas into practice (Barringer, Ireland 2008). In this research primarily focus is on the entrepreneurial personality characteristics, eventually leading towards entrepreneurial intentions through support of the network. Further, an individual's psychological, sociological and demographic characteristics have an impact on that individual's capacity in order to become an entrepreneur (Dollinger 1995). It is also mentioned that the "Big Three" characteristics of an entrepreneur are the need for achievement, locus of control and risk-taking propensity (Chell 2008). However, the personality characteristics as similar to this study, found that the risk-taking propensity, tolerance for ambiguity, openness and flexibility and self-confidence are positively related to entrepreneurial success (Fine et al., 2012). Similarly, there are several academic studies, those emphasized on the entrepreneurial characteristics such as need for achievement, locus of control, risk-taking propensity, need for autonomy, decisiveness, initiative, creativity, self-confidence and trust (Westhead, Solesvik, 2016).

On the other hand, entrepreneurial intention is described as a cognitive representation of actions to be implemented by individuals, either establishing their new independent ventures or to create new value within existing companies (Kusmintarti et al. 2014). Entrepreneurial characteristics are related with entrepreneurial intention through the mediation of entrepreneurial attitude (Asdani et al., 2014). Similarly, in linking entrepreneurial personality with their intention and performance, that Big Five personality dimensions were associated with both dependent variables: Intention and Performance (Zhou et al., 2009). However, this study is different in the perspective that first of all, those above studies didn't include all six dimensions included in this study such as Locus of Control, Risk-taking propensity, Self Confidence, Need for achievement, Tolerance to ambiguity and Innovativeness. Second, this phenomenon is studied in rural areas of Pakistan and third, the link is not established through the network orientation, a mediating factor in previous studied conducted in similar domain. Hence, this study is going to fill the gap that is left wide and open by other scholars of same arena.

The conceptual model is the reflection of previous models developed in previous literature where psychological characteristics relationship is drawn with entrepreneurial intentions and networking orientation with entrepreneurs (Dinis et al., 2013; Ebbers, 2014).

PROBLEM STATEMENT

Although, the entrepreneurship domain has been widely discussed and researched upon but, the entrepreneur as an individual, and the attributes those lead an individual to create an intention to become an entrepreneur has not been studied comprehensively so far. Moreover, entrepreneurial action is taken as a planned behavior; commonly refer to an intention that is mostly influenced by attitudes (Krueger, Carsrud, 1993). Intention is associated with cognition including beliefs, perceptions and actions (Ajzen, 1991). While, the domain of personality characteristics of an entrepreneur has been examined over the last decades and psychological characteristics has been considered as possible sources for the entrepreneurial performance. Therefore, a wide variety of research surveyed characteristics those can determine and provide the answer “who is more likely to start a business” (Gupta, Muita 2013). Hence, this study has chosen the personal characteristics of an entrepreneur mediated with its network orientation in order to discover the link between the personal characteristics of an entrepreneur and its intention to open or continue an existing business in the context of rural areas of Pakistan.

RESEARCH OBJECTIVE

Based on research gap just mentioned above, the objective of this study is to investigate the networking orientation’s mediating effect in relationship of entrepreneurial personality traits and entrepreneurial intentions of small scale entrepreneurs. Although related past literature supports the relationship between entrepreneurial personality characteristics and entrepreneurial intentions but limited evidences revealed the mediating effect of networking orientation in relationship of personality characteristics and intentions (Light, Dana, 2013).

LITERATURE REVIEW

Entrepreneurship is a way to face big challenges such as, unemployment and poverty and reduced economic growth (Robson et al., 2009). The positive link of entrepreneurship has been determined with economic growth and innovation (Oosterbeek et al. 2010). The entrepreneurship is defined as a process of discovery, evaluation, and exploitation of opportunities (Leyden et al., 2014). Not only this it is also considered as a set of activities involved in establishing and developing a new venture (Cooper, 2017; Khuong, An,

2016). The word entrepreneurship is taken from French language literally meaning “the one who undertakes” (Dollinger, 2008).

The personality characteristics of entrepreneurship is a tendency of risk-taking, innovativeness, motivation for achievement, self-confidence, responsibility, hardworking, tolerance, locus of control, achievement orientation, dominance, and self-efficacy (Zhang, Zhang, 2013). In addition, risk attitude, locus of control, extraversion, and openness to experience, agreeableness and neuroticism are also discussed as personality characteristics of entrepreneurship (Caliendo et al., 2014).

Locus of Control is a belief on fate, and this word is taken from Latin word meaning place or location, either internal or external (Prakash et al., 2015). Internal locus of control is a success or failure depending upon the efforts invested instead of luck or fate and external locus of control is fate depending upon luck not in human control (Hsiao et al., 2016). Specifically, locus of control is necessary for an individual to take risk (Khuong, An, 2016).

Risk-taking propensity is an individual’s inclination to take or avoid risk. It is the characteristics of an entrepreneurial success and ability to take deliberate risk (Chatterjee, Das, 2015; Prakash et al., 2015). So the proactive and risk taker entrepreneurs are better at identifying and developing entrepreneurial opportunities (Omorede et al., 2015; Block et al., 2015). It is necessary for entrepreneurs to have inherent risk-taking ability, because individuals make decisions by accessing complex situations with some target returns in their minds; further risk-taking propensity positively influence entrepreneurial intentions (Ozaralli, Rivenburgh, 2016). Even short term risk-taking has been observed as a positive contributor in entrepreneurial intention (Zhang et al., 2015). Thus, risk-taking helps in innovation when mediated by employees’ risk-taking propensity (García-Granero et al., 2015).

Self Confidence is an ability of handling events and executing those in life with confidence (Chatterjee, Das, 2015). Its direct impact exists on productivity asserting owner as a winner, even this self believe causes to work hard for success in entrepreneurship (McKenzie, 2017). The high belief in capabilities is developing from past experiences which generate self-confidence for success in entrepreneurship (Lee et al., 2016). Self-confidence enables an entrepreneur to accomplish business startup process and it influence entrepreneurial intentions positively with mediation of attitude toward entrepreneurship (Aparicio et al., 2016; Tsai et al., 2016).

Need for achievement is an individual’s motivational attribute to desire for achieving brilliant success (Chatterjee, Das, 2015). Achievement driven individuals are contributing rapidly in economic growth with the help of generating entrepreneurial opportunities (Jelilov, Onder, 2016). While in education of entrepreneurship for increasing entrepreneurial skills the moderate effect of need for achievement has been observed (Din et al., 2016). Moreover, individuals having high need for achievement are more capable and perform better along with higher ability to prevail under difficult situations as compared to those individuals having lower need for achievement (Karimi et al., 2017).

Tolerance to ambiguity is an ability to recognize ambiguous situations as open and desirable, also an ambiguous situation is composed of insufficient, complicated and outwardly conflicting information needed to be tolerated by an individual (Chatterjee, Das, 2015). It is the avoidance for uncertainty and ambiguity, referring degree of individual focus to avoid uncertain events (Tahir, 2014). In uncertain situations entrepreneurs must respond positively because of insufficient information available for decision making, but if he has trust on himself then he is tolerant of ambiguity (Mohanty, 2015).

Innovativeness is an ability to generate ideas concluding in the creation of new products and services (Prakash et al., 2015). It is also instrumental in a way in which an entrepreneur can exploit ideas for the generation of new products and business opportunities (Chatterjee, Das, 2015; Omorede et al., 2015). The success of an entrepreneur is measured by ability of innovations by introducing new technology in products and services (Mohanty, 2015). Innovation and creativity are considered as crucial factors to enhance entrepreneurship, which certainly leads towards economic growth and development (Westhead, Solesvik, 2016).

Entrepreneurial Intention is a key element in understanding process of business creation contributed by a number of researches in an entrepreneurial context and characteristics (Liñán et al., 2011). The psychological characteristics i.e. self-confidence, need for achievement showed positive relationship, while propensity to risk showed negative relationship and other three variables i.e. tolerance for ambiguity, locus of control and innovativeness relationship found to be insignificant (Dinis et al., 2013). The entrepreneurial intentions relationship with personality characteristics has been confirmed in previous studies mainly in meta-analysis (Liñán, Fayolle, 2015). Even though, the developed regions with support of social environment have contributed more in terms of entrepreneurial intentions as compared to less developed regions (Liñán et al., 2011).

Networking Orientation appeared to be equally valuable for personal gains as explained in a comparative study, showing the positive relationship with those business partners whom business assignments were given and no relationship found with those whom business assignments were received (Ebbers, 2014). Networking behavior of individuals in educational trainings has been determined having positive relationship with training and coaching but no relationship found just with only training (Spurk et al., 2015). The positive moderating effect of business networking found on entrepreneurial orientation and new venture performance (Su et al., 2015). Further networking effectiveness mediated partially in the relationship between entrepreneurial orientation and firm performance in small and medium enterprises (Hughes et al., 2015).

CONCEPTUAL FRAMEWORK

Mediating effect of networking orientation in influence of entrepreneurship on entrepreneurial intentions (EI ← NO ← ENT)

Networking orientation and entrepreneurial intentions relationship is significant with entrepreneurship (Ebbers, 2014; Frederick et al., 2018). There is positive relationship between entrepreneurship and entrepreneurial intentions in educational institutions (Dinis et al., 2013). Mediating relationship of social networking between individuals and resources has been tested for confirmation of contribution in success (Foley, & O'Connor, 2013). Personality characteristics, i.e., locus of control and self-confidence effects significantly, while need for achievement effects were insignificant to entrepreneurial intentions (Sesen, 2013). Contrary to this business students in private universities of Pakistan have shown a positive influence of personality characteristics on entrepreneurial intentions (Farrukh et al., 2017). Further social networking provided support with positive relationship in case of organizational learning (Assis-Dorr et al., 2012). So the entrepreneurial orientation and entrepreneurship has been tested as a mediator and moderator in organization flexibility and strategic business performance (Yousaf, Majid, 2018). For mediation below hypotheses is drawn based on above information.

H1: Networking orientation has significant effect in influence of entrepreneurship on entrepreneurial intentions

Mediating effect of networking orientation in influence of Locus of Control on entrepreneurial intentions (EI ← NO ← LC)

The study shows that when individuals face challenges and difficulties the locus of control can assist them to be more proactive in order to get help from individuals in their social network (Chen, Yen 2012). As it is revealed that locus of control can lead to positive entrepreneurial attitudes (Soomro, Shah, 2015). Also, the locus of control can be enhanced when mediated with social capital in association with entrepreneurship (Hsiao et al., 2016).

In terms of big five traits, the locus of control contribute significantly with entrepreneurial activity (Obschonka, Stuetzer, 2017). Hence below hypotheses is drawn based on above information.

H2: Networking orientation has significant effect in influence of locus of control on entrepreneurial intentions

Mediating effect of networking orientation in influence of risk-taking propensity on entrepreneurial intentions (EI ← NO ← PR)

The risk-taking propensity has negative influence on entrepreneurial intentions in students to start business (Dinis et al., 2013). Contrary, risk-taking propensity influence significantly and is positive to entrepreneurial intentions in male entrepreneurs as compared to female entrepreneurs (Sánchez, Licciardello, 2017). Further the opportunity entrepreneurs take more risk to achieve success in entrepreneurial activities (Block et al., 2015). Even duration of risk-taking matters (Zhang et al., 2015). Further risk-taking

when tested as a mediator enhanced influence of creativity theory on innovation (García-Granero et al., 2015). Hence based on above information below hypotheses is drawn.

H3: Networking orientation has significant effect in influence of risk-taking propensity on entrepreneurial intentions

Mediating effect of networking orientation in influence of Self Confidence on entrepreneurial intentions (EI ← NO ← SC)

Self-confidence has positive influence on entrepreneurial intentions in students starting new business (Dinis et al., 2013). Similarly, self-confidence is significantly and positively correlated with opportunity entrepreneurship (Aparicio et al., 2016). In mediating effect self-confidence exerts significant and positive effect (Zhao et al., 2005). Further moderation of social environment is also available in relationship of entrepreneurial education and entrepreneurial intentions (Ekpe, Mat, 2015). Similarly, self-confidence showed significant and positive effects when mediated in emotional intelligence and entrepreneurial intentions (Mortan et al., 2014). So from above discussion the hypotheses can be drawn as below.

H4: Networking orientation has significant effect in influence of self-confidence on entrepreneurial intentions

Mediating effect of networking orientation in influence of need for achievement on entrepreneurial intentions (EI ← NO ← NA)

Moderate relationship of need for achievement appears in reducing unemployment and enhancing performance of entrepreneurial activity (Din et al., 2016). Even when need for achievement mediated by contextual factors (perceived support and perceived barriers) the significant relationship has been determined with entrepreneurial intentions (Karimi et al., 2017). Need for achievement correlate positively with firm success (Khan et al., 2015). Hence below hypotheses is drawn based on above information.

H5: Networking orientation has significant effect in influence of need for achievement on entrepreneurial intentions

Mediating effect of networking orientation in influence of tolerance for ambiguity on entrepreneurial intentions (EI ← NO ← TA)

There exists insignificant relationship of entrepreneurial intentions for tolerance to ambiguity in students (Dinis et al., 2013). But in Turkish student's tolerance for ambiguity found to have low influence on entrepreneurial intentions (Gürol, Atsan, 2006). While, tolerance for ambiguity influence on entrepreneurial intentions is more in American as compared to Irish with insignificant results (De Pillis, Reardon, 2007). But the network level entrepreneurial orientation is influenced by the mediating effect

of networking (Wincent et al., 2016). Hence below hypotheses is drawn based on above information.

H6: Networking orientation has significant effect in influence of tolerance for ambiguity on entrepreneurial intentions

Mediating effect of networking orientation in influence of Innovativeness on entrepreneurial intentions (EI ← NO ← IN)

There exists insignificant relationship of innovativeness to entrepreneurial intentions in students (Dinis et al., 2013). Innovativeness in mediation enhanced the relationship of social networking and learning orientation on performance (Pesämaa et al., 2015). Female entrepreneurs' intentions have more significant and positive influence of innovative outcomes (Ratten, 2016). The mediation analysis of entrepreneurial intentions can be enhanced in emerging technology industries by personal innovativeness of the entrepreneurs (Dutta et al., 2015). Hence below hypotheses is drawn based on above information.

H7: Networking orientation has significant effect in influence of innovativeness on entrepreneurial intentions

RESEARCH METHODOLOGY

This study has used the quantitative paradigm and it is cross-sectional in nature. The sampling design used is non-probability convenience sampling, as it is the best method that could be employed to conduct the study in limited time (Lavrakas, 2008).

The study is based on small scale entrepreneurs, so all the data is collected through survey questionnaire from shopkeepers of mentioned three cities. For data collection, a paper based questionnaire survey was conducted from November 2018 to March 2019 from small scale business owners (i.e., shopkeepers) not having more than five employees, in three cities of North Sindh namely; Khairpur Mir's, Shikarpur, and Sukkur. The non-probability sampling based on convenience method was tailored to distribute 500 translated versions of survey questionnaires in order to avoid any kind of language barrier and get appropriate response from the respondents. As a result, the final usable responses received are 250 and the response rate remained 50%.

The survey questionnaire consumed for this study was based on previously established scale of 36 items on entrepreneurial intention and psychological characteristics (Dinis et al., 2013; Liñán, Chen, 2009) and five item scale of networking orientation (Ebbers, 2014; Hoogendoorn et al., 2013). Further researcher self-administered the scale and translated it in local languages, i.e., Sindhi and Urdu for understanding of local respondents who don't know English. The translation of questionnaires did with help of language specialist to keep the scale reliability and validity.

ANALYSIS AND RESULTS

Respondents Profile

Referring the data in Table 1, personal and categorical information has been achieved in five criteria i.e. gender, age, education, experience and location. According to descriptive results total 250 respondents out of which 232 nearly 92.8% are male and only 18 nearly 7.2% are female. The quantity of female respondents is very small because of cultural limitations and limited female entrepreneurs in Pakistani society; even these female respondents' data were collected with high efforts. These females are the owners of beauty parlors and female dress designers etc. Further details about remaining criteria's are given in table 1.

Table 1: Personal and Categorical Information

Category	Profile	Total Number	(%)
Gender	Male	232	92.8
	Female	18	7.2
Age	Up to 25	16	6.4
	26 –35	72	28.8
	36 – 45	80	32.0
	46 – 55	57	22.8
	Above 55	25	10.0
Educational Level	No Education	08	3.2
	Intermediate or less	71	28.4
	Bachelors	93	37.2
	Masters	68	27.2
	MPhil/PhD	10	4.00
Experience	02 or less years	11	4.4
	04 years	12	4.8
	06 years	27	10.8
	08 years	60	24.0
	10 years	74	29.6
	12 or above years	66	26.4
Location	Khair Pur Mir's	85	34.0
	Shikarpur	69	27.6
	Sukkur	96	38.4

Source: Own survey.

Reliability Validity Analysis

Three techniques are adopted to access the internal consistency of the measures, i.e. Cronbach's Alpha 0.70 (Dinis et al., 2013), Composite reliability and Average Variance Extracted. The overall questionnaire Cronbach's Alpha results appeared 0.830 showing strong internal consistency of the measure as shown below in table 2. Further table 3, describes internal consistency results along with minimum threshold of each technique. Results show similarity with past literature (Davis et al., 2016;

Dinis et al., 2013) i.e. composite reliability and Cronbach's Alpha of propensity to risk, self-confidence, need for achievement, tolerance to ambiguity, innovativeness and entrepreneurial intentions are approaching to 0.70 except self-confidence CR 0.567. Further it has been observed that except entrepreneurial intentions, composite reliability and Cronbach's Alpha are improved and are approaching toward threshold limit 0.70.

While average variance extracted explains the total elements of variance in the indicators which accounted for latent variables, its minimum level of satisfaction threshold is 0.30 (Hair et al., 2010), further average variance extracted is a measure of variance retained by amount with latent construct relative to variance remaining from measurement error and somewhere threshold is 0.50 i.e. in field of marketing research (Maitlo et al., 2017). Here in this study result of locus of control's is above 0.45 and networking orientation above 0.32 but other variables is less than satisfactory level indicating low total elements variance in the indicators. Further based on our sample of 250 participants, Cronbach's alpha and composite reliability of scale support to use it in data collection, these both will increase if this scale will be applied to more sample size.

Table 2: Scale Reliability Statistics

Cronbach's Alpha	**N of Items**
.830	8

Source: Own survey.

Table 3: Results of Cronbach Alpha, Composite Reliability, Average Variance Extracted (AVE)

Dimensions	Cronbach – α	Composite Reliability (CR)	Average Variance Extracted (AVE)
Threshold Limit	**≥ 0.7**	**≥ 0.7**	**≥ 0.5**
Locus of control	0.829	0.83	0.45
Propensity to take risk	0.651	0.647	0.273
Self confidence	0.647	0.567	0.179
Need for achievement	0.635	0.629	0.232
Tolerance to ambiguity	0.67	0.658	0.294
Innovativeness	0.672	0.63	0.249
Networking Orientation	0.737	0.739	0.324
Entrepreneurial Intentions	0.692	0.656	0.257

Source: Own survey.

Correlation Analysis

Correlation between variables shown in table 4 indicates the strength of relationship of variables at significant level below 0.05, ranging from -1 to +1 (Lind et al., 2012). The results show weak relationship with dependent variable except locus of control having value above 0.5 at significant level 0.05, but the relationship of all independent variables is significant.

Table 4: Results of the Pearson Correlation Coefficients (r)

Dimension	Frequency	Correlation Coefficient (r)	Sig Level
LC and EI	250	0.562	0.000
PR and EI	250	0.427	0.000
SC and EI	250	0.351	0.000
NA and EI	250	0.415	0.000
TA and EI	250	0.317	0.000
IN and EI	250	0.358	0.000
NO and EI	250	0.229	0.000

Table 5: Hypotheses Testing

Hypotheses	Path	R^2	* γ	**t-value	***p-value	Result
H1	EI ← ENT (Direct Model)	0.66	.343	◦Fixed	0.000	Supported
	EI ← NO ← ENT (Indirect Model)	1.00	.471	◦Fixed	0.000	
H2	EI ← LC (Direct Model)	.078	.692	4.334	0.001	Supported
	EI ← NO ← LC (Indirect Model)	.142	.884	6.231	0.000	
H3	EI ← PR (Direct Model)	.051	.220	3.513	0.000	Supported
	EI ← NO ← PR (Indirect Model)	.056	.200	3.577	0.000	
H4	EI ← SC (Direct Model)	.067	-.119	-1.611	0.054	Rejected
	EI ← NO ← SC (Indirect Model)	.084	-.180	-2.145	0.032	
H5	EI ← NA (Direct Model)	.072	.393	2.931	0.002	Supported
	EI ← NO ← NA (Indirect Model)	.058	.201	3.491	0.001	
H6	EI ← TA (Direct Model)	.0693	-.147	-2.228	0.009	Rejected
	EI ← NO ← TA (Indirect Model)	.058	-.158	-2.724	0.006	
H7	EI ← IN (Direct Model)	.163	.870	8.342	0.000	Supported
	EI ← NO ← IN (Indirect Model)	.151	.691	5.779	0.002	

* Gamma (γ)
** t ≥ 1.96
*** p ≤ 0.05
◦Based on ML estimate fixed parameter @ 1.0

Source: Own survey.

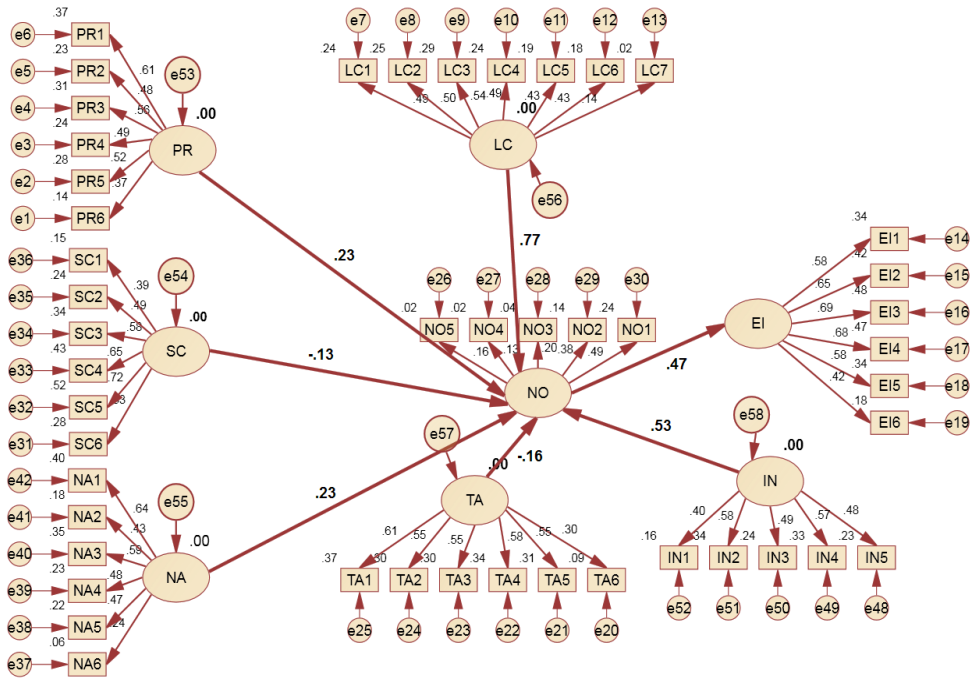
The Structural Equation Model

Structural equation model analysis through IBM-SPSS Amos, adopted because it facilitates to identify, evaluate and represent hypothesized relations between variables through graphical and non-graphical paths in model. Structural equation model is considered cross-sectional, linear statistical method of analysis and generally yield a model fit with normal data distribution. Especially, mediation in regression and path analysis used in this study are special features of structural equation model, because of which it is feasible that researcher can use it with least sample size for measurement scale and residual distribution (Hair et al., 2012).

Measurement Model Results

In total, eight latent variables and 56 individualized items were consumed to construct the hypothesized model of this study. Figure 2 represents a measurement model results based on the main hypotheses. The result shows that the relationship of personality characteristics and entrepreneurial intentions is mediated positively and significantly (0.47) by networking orientation in comparison of past researches (Dinis et al., 2013). Even fit indices results can determine that few indices are good and few have weaker results. i.e. $\chi 2$ is 1901.456 shows good fit. Also other model fit indices such as CFI (comparative fit index) = 0.887, TLI (tucker-Lewis index) = 0.863, IFI (incremental fit index) = 0.894, NFI (normed fit index) = 0.855, and RMSEA (root-mean-square error of approximation) = 0.073, values left behind the recommended threshold edges i.e. NFI≥ 0.90, CFI≥ 0.90 and RMSEA ≤ 0.08.

Figure 1: Measurement Model Results based on Hypotheses H1, H2, H3, H4, H5, H6, and H7



Fit Indices Result

$\chi 2$ = 1901.456, $\chi 2$ / df = 2.33, CFI = 0.887, TLI = 0.863, IFI = 0.894, NFI = 0.855, RMSEA = 0.073

Source: Own survey.

Hypotheses Testing Results

The path model was tested using multivariate analysis technique as the results of both direct and indirect model(s) are reported in Table 5. In case of both direct and indirect path model(s), the five hypotheses were supported

and the relationship found to be significant at p-value < 0.05. Further, the model fitness was checked through chi square value which implies that the hypotheses H1, H2, H3, H5 and H7 couldn't be rejected. For the mediated model, H1 (EI ← NO ← ENT: **γ=** 0.47, p-value = 0.00), H2 (EI ← NO ← LC: **γ=** 0.884, t= 6.231, p-value = 0.00), H3 (EI ← NO ← PR: **γ=** 0.200, t= 3.577, p-value = 0.00), H5 (EI ← NO ← NA: **γ=** 0.201, t= 3.491, p-value = 0.00) and H7 (EI ← NO ← IN: **γ=** 0.691, t= 5.779, p-value = 0.00) appeared significant. Whereas; hypotheses H4 (EI ← NO ← SC: **γ= -**0.180, t= -2.145, p-value = 0.032) and H6 (EI ← NO ← TA: **γ= -**0.158, t= -2.724, p-value = 0.006) are rejected because of negative gamma and t value.

Finally, in this analysis it is concluded that the relationship of entrepreneurial intentions is mediated by networking orientation when tested with the six dimension(s) of entrepreneurial personality characteristics i.e. locus of control, propensity to take risk, self-confidence, need for achievement, tolerance to ambiguity and innovativeness. Out of these only four determined the positive and significant while two i.e. self-confidence and tolerance to ambiguity determined significant but negative relationship with entrepreneurial intentions when mediated by networking orientation.

DISCUSSION

Based on purpose of study the empirical relationship found to be significant and positive in four independent variables i.e. locus of control, propensity to take risk, need for achievement and innovativeness but significant and negative in two independent variables i.e. self-confidence and tolerance to ambiguity with dependent variable when mediated by networking orientation. While in previous literature it was found that without mediation the propensity to take risk were supported with negative relationship, but locus of control, tolerance to ambiguity and innovativeness were not supported, only two independent variables need for achievement and self-confidence were supported (Dinis et al., 2013). Similarly, when behavior and psychological approaches relationship applied simultaneously with entrepreneurial intentions, only hypotheses of need for achievement supported from psychological approach along with hypotheses of social norms and personal attitude from behavioral approach (Ferreira et al., 2012). But when personality and contextual factors mediated by theory of planned behavior with entrepreneurial intentions, risk-taking propensity, need for achievement and locus of control found strongly correlated with entrepreneurial intentions after mediation, and this is consistent with past researches that when personality traits are mediated with behavioral characteristics they have shown prediction of entrepreneurial intentions (Karimi et al., 2017).

Here in results of this study, hypothesized relationship of self-confidence and tolerance to ambiguity with entrepreneurial intentions is negative but significant when mediated by networking orientation and hence rejected because it was set as positive and significant. All of the relationships are having above 95% confidence level i.e. of significant level less than 0.05 ($p \leq 0.05$). Among all variables independent and dependent after mediation

correlation results are significant and positive which also support the results mediation effects. Similarly, past studies identified the personality traits not only effect probability of becoming entrepreneur but also the entrepreneurial process (Caliendo et al., 2014). Most of the past studies have tested simple relationship of entrepreneurial traits with different variables i.e. entrepreneurial intentions, entrepreneurial process, entrepreneurial orientation etc. but the mediating relationship is lacking to test effect of personality traits (Karimi et al., 2017; Diniset al., 2013; Caliendo et al., 2014; Ferreira et al., 2012). Finally, enhanced relationship of entrepreneurial traits with entrepreneurial intentions examined when mediated by networking orientation.

Referring the complexity of model, six independent variables are concurrently tested with entrepreneurial intentions in mediation of networking orientation, certainly disturbs the fitness indices but the level of fitness indices is not too much away from threshold, so covering normality of data distribution and testing relationship is determined. Also the context along with sample size matters and these indices can be enhanced by improving sample size.

CONCLUSION AND RECOMMENDATION

Output from this research contributes a step forward in field of entrepreneurship because by enhancing networking orientation an entrepreneur can enhance his intentions of entrepreneurship, if he has entrepreneurial personality characteristics. Currently in Pakistan there is dire need of entrepreneurship for economic prosperity, Pakistan is facing challenge of lesser entrepreneurship activity than other developing countries in Asia i.e. Sri Lanka, Bangladesh and India, and is ranked on 138th out of 189 countries on the level of ease of doing business (Shabbir et al., 2018). So this research recommends proactive measures and can help the researches, decision makers in enhancing the potential of entrepreneurship in small scale business individuals as well as initiators.

LIMITATIONS

Along with general limitations of time, resources and data collection the survey is conducted only from three cities of north Sindh i.e. Khairpur Mir's, Sukkur and Shikarpur. Further the use of convenient (non-probability) sampling for easy access to sample is a potential limitation that can be circumvented in future studies.

FUTURE DIRECTIONS

The mediation of networking orientation can be tested in a relationship of entrepreneurial orientation along with all six as well as in two different sets of

three independent variables of personality traits. In this research paper the Structural Equation Model (SEM) implied but in future other testing techniques i.e. Partial Least Square (PLS) can be implied to get results for analysis.

Table 4. Cross-sectional Regressions: The Impact of Innovations in Multidimensional Aspects of Liquidity on Security Prices

Panel A					***Adjusted R^2***
Intercept	$\beta 5_{it}$				0.14
0.0199 (2.09)	0.0167 (3.98)***				
Panel B					
Intercept	$\beta 4_{it}$				0.12
0.01548 (2.14)	0.0261 (2.31)**				
Panel C					
Intercept	$\hat{\beta}_{it}$	$\beta 5_{it}$			0.09
0.0179 (3.90)	0.2565 (0.69)	0.0308 (1.71)*			
Panel D					
Intercept	$\hat{\beta}_{it}$	$\beta 1_{it}$	$\beta 2_{it}$	$\beta 3_{it}$	0.04
0.0148 (2.89)	0.01662 (0.42)	0.0639 (1.89)*	-0.0031 (-0.34)	0.0006 (0.87)	

Source: Own survey.

Panel A of Table 4 shows that the net beta comprising of the systematic market risk component and the liquidity risk arising out of the innovations multidimensional measures is significantly priced in Indian stock market. It confirms that the common Indian investor demands an excess return for holding securities that are having liquidity risk which may be arising out of cost, quantity or time aspects of liquidity along with the systematic risk of the market.

From Panel B, it can be reaffirmed that the investors explicitly demand a premium for holding securities whose liquidity movements (expected or unexpected) commoves with the liquidity of the market. Such commoving innovations can be raised out of cost, quantity or time aspect of liquidity, or from the combination of these aspects. Panel C discloses that, as in the case of innovations in individual aspects of liquidity, when the element of liquidity risk is incorporated, the investors are not concerned significantly for having a premium for bearing only the market risk alone. Nevertheless, they demand a significant premium for bearing the additional risk of liquidity

(illiquidity, more precisely) arising from unexpected fluctuations in different dimensions of liquidity of a stock responding to that in the market in addition to the market risk.

Panel D confirms that the co-movements between innovations in individual stocks liquidity and that of market liquidity are significantly priced in the Indian stock market. However, it is found that the investors are least bothered about having significant premiums for holding securities whose returns are co-moving with the market-level innovations in liquidity or whose innovations in liquidity are co-moving with market returns when the liquidity risk (it can be any dimension of liquidity risk) of individual stock is found to be responding significantly to the market-wide liquidity risk. The results thus, validate that the common investors expect a premium for holding securities that are having greater liquidity risk in association with market-wide liquidity risk rather than for the mere market risk.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. Organizational behavior and human decision processes, 50(2), 179–211.

Aparicio, S., Urbano, D., Audretsch, D. (2016). Institutional factors, opportunity entrepreneurship and economic growth: Panel data evidence. Technological Forecasting and Social Change, 102, 45–61.

Asdani, A., Kusmintarti, A. (2014). the impact of entrepreneurship education, internal locus of control, presentation need, creativity, gender and family towards entrepreneurship intention on students in polinema accountancy faculty. Journal of Management and Business, 13(1).

Assis-Dorr, H., Palacios-Marques, D., Merigó, J. M. (2012). Social networking as an enabler of change in entrepreneurial Brazilian firms. Journal of Organizational Change Management, 25(5), 699–708.

Barringer, B. R., Ireland, R. D. (2008). Entrepreneurship-Successfully launching new ventures 2nd ed.

Block, J., Sandner, P., Spiegel, F. (2015). How do risk attitudes differ within the group of entrepreneurs? The role of motivation and procedural utility. Journal of Small Business Management, 53(1), 183–206.

Caliendo, M., Fossen, F., Kritikos, A. S. (2014). Personality characteristics and the decisions to become and stay self-employed. Small Business Economics, 42(4), 787–814.

Chatterjee, N., Das, N. (2015). Key psychological factors as predictors of entrepreneurial success: A conceptual framework. Academy of Entrepreneurship Journal, 21(1).

Chell, E. (2008). The nascent entrepreneur, business development and the role of human resources. International handbook of entrepreneurship and HRM, 21–46.

Chen, H. H., Yen, J. Y. (2012). The relationship of personality, human capital, social capital and entrepreneurship. 2012 Health and Management Conference, Taipei.

Cooper, A. C. (2017). Networks, alliances, and entrepreneurship. Strategic Entrepreneurship: creating a new mindset, 201–222.

Davis, M. H., Hall, J. A., Mayer, P. S. (2016). Developing a new measure of entrepreneurial mindset: Reliability, validity, and implications for practitioners. Consulting Psychology Journal: Practice and Research, 68(1).

De Pillis, E., Reardon, K. K. (2007). The influence of personality traits and persuasive messages on entrepreneurial intention: A cross-cultural comparison. Career Development International, 12(4), 382-396.

Din, B. H., Anuar, A. R., Usman, M. (2016). The effectiveness of the entrepreneurship education program in upgrading entrepreneurial skills among public university students. Procedia-Social and Behavioral Sciences, 224, 117–123.

Dinis, A., do Paco, A., Ferreira, J., Raposo, M., Gouveia Rodrigues, R. (2013). Psychological characteristics and entrepreneurial intentions among secondary students. Education+ Training, 55(8/9), 763–780.

Dollinger, M. J. (2008). Entrepreneurship: Strategies and resources. Marsh Publications.

Dutta, D. K., Gwebu, K. L., Wang, J. (2015). Personal innovativeness in technology, related knowledge and experience, and entrepreneurial intentions in emerging technology industries: a process of causation or effectuation?. International Entrepreneurship and Management Journal, 11(3), 529–555.

Ebbers, J. J. (2014). Networking behavior and contracting relationships among entrepreneurs in business incubators. Entrepreneurship Theory and Practice, 38(5), 1159-1181.

Ekpe, I., Mat, N. (2015). The moderating effect of social environment on the relationship between entrepreneurial orientation and entrepreneurial intentions of female students at Nigerian universities.

Farrukh, M., Khan, A. A., Shahid Khan, M., Ravan Ramzani, S., Soladoye, B. S. A. (2017). Entrepreneurial intentions: the role of family factors, personality traits and self-efficacy. World Journal of Entrepreneurship, Management and Sustainable Development, 13(4), 303-317.

Ferreira, J. J., Raposo, M. L., Gouveia Rodrigues, R., Dinis, A., do Paço, A. (2012). A model of entrepreneurial intention: An application of the psychological and behavioral approaches. Journal of Small Business and Enterprise Development, 19(3), 424–440.

Fine, S., Meng, H., Feldman, G., Nevo, B. (2012). Psychological predictors of successful entrepreneurship in China: An empirical study. International Journal of Management, 29(1), 279.

Foley, D., O'Connor, A. J. (2013). Social capital and the networking practices of indigenous entrepreneurs. Journal of Small Business Management, 51(2), 276–296.

Frederick, H., O'Connor, A., Kuratko, D. F. (2018). Entrepreneurship. Cengage AU.

García-Granero, A., Llopis, Ó., Fernández-Mesa, A., Alegre, J. (2015). Unraveling the link between managerial risk-taking and innovation: The mediating role of a risk-taking climate. Journal of Business Research, 68(5), 1094–1104.

Gupta, A., Muita, S. R. (2013). Relationship between entrepreneurial personality, performance, job satisfaction and operations strategy: An empirical examination. International Journal of Business and Management, 8(2).

Gürol, Y., Atsan, N. (2006). Entrepreneurial characteristics amongst university students: Some insights for entrepreneurship education and training in Turkey. Education+ Training, 48(1), 25-38.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. Tatham, R. L. (2010). Multivariate data analysis with readings. 7 ed. Upper Saddle River, N.J: Pearson/Prentice Hall.

Hair, J. F., Sarstedt, M., Ringle, C. M., Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. Journal of the academy of marketing science, 40(3), 414–433.

Hoogendoorn, S., Oosterbeek, H., Van Praag, M. (2013). The impact of gender diversity on the performance of business teams: Evidence from a field experiment. Management Science, 59(7), 1514-1528.

Hsiao, C., Lee, Y. H., Chen, H. H. (2016). The effects of internal locus of control on entrepreneurship: the mediating mechanisms of social capital and human capital. The International Journal of Human Resource Management, 27(11), 1158–1172.

Hughes, M., Eggers, F., Kraus, S., Hughes, P. (2015). The relevance of slack resource availability and networking effectiveness for entrepreneurial orientation. International Journal of Entrepreneurship and Small Business, 26(1), 116–138.

Jelilov, G., Onder, E. (2016). Entrepreneurship in Nigeria Realities on Ground. Pyrex Journal of Business and Finance Management Research, 006-009.

Karimi, S., Biemans, H. J., Naderi Mahdei, K., Lans, T., Chizari, M., Mulder, M. (2017). Testing the relationship between personality characteristics, contextual factors and entrepreneurial intentions in a developing country. International Journal of Psychology, 52(3), 227–240.

Khan, M. S., Breitenecker, R. J., Schwarz, E. J. (2015). Adding fuel to the fire: Need for achievement diversity and relationship conflict in entrepreneurial teams. Management Decision, 53(1), 75–99.

Khuong, M. N., An, N. H. (2016). The factors affecting entrepreneurial intention of the students of Vietnam national university - a mediation analysis of perception toward entrepreneurship. Journal of Economics, Business and Management, 4(2), 104–111.
Krueger, N. F., Carsrud, A. L. (1993). Entrepreneurial intentions: Applying the theory of planned behaviour. Entrepreneurship & Regional Development, 5(4), 315–330.
Kusmintarti, A., Thoyib, A., Ashar, K., Maskie, G. (2014). The relationships among entrepreneurial characteristics, entrepreneurial attitude, and entrepreneurial intention. IOSR Journal of Business and Management, 16(6), 25–32.
Lavrakas, P. J. (2008). Encyclopedia of survey research methods. Sage Publications.
Lee, C., Hallak, R., Sardeshmukh, S. R. (2016). Innovation, entrepreneurship, and restaurant performance: A higher-order structural model. Tourism Management, 53, 215-228.
Leyden, D. P., Link, A. N., Siegel, D. S. (2014). A theoretical analysis of the role of social networks in entrepreneurship. Research Policy, 43(7), 1157–1163.
Light, I., Dana, L. P. (2013). Boundaries of social capital in entrepreneurship. Entrepreneurship Theory and Practice, 37(3), 603–624.
Liñán, F., Chen, Y. W. (2009). Development and Cross- Cultural application of a specific instrument to measure entrepreneurial intentions. Entrepreneurship theory and practice, 33(3), 593-617.
Liñán, F., Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. International Entrepreneurship and Management Journal, 11(4), 907–933.
Liñán, F., Urbano, D., Guerrero, M. (2011). Regional variations in entrepreneurial cognitions: Start-up intentions of university students in Spain. Entrepreneurship and Regional Development, 23(3), 187–215.
Lind, D. A., Marchal, W. G., Wathen, S. A. (2012). Statistical techniques in business & economics. New York, NY: McGraw-Hill/Irwin,.
Maitlo, A. A., Memon, S. B., Syed, S. (2017). Influence of psychological capital on knowledge sharing behaviour in research fellows of public sector universities. Journal of Business Strategies, 11(2), 1–20.
McKenzie, D. (2017). Identifying and spurring high-growth entrepreneurship: experimental evidence from a business plan competition. American Economic Review, 107(8), 2278–2307.
Mohanty, S. R. (2015). Empirical Study on Entrepreneurs' Interpersonal Traits and its Effect on Business Performance of SMEs (Doctoral dissertation).
Mortan, R. A., Ripoll, P., Carvalho, C. (2014). Effects of emotional intelligence on entrepreneurial intention and self-efficacy. Revista de Psicología del Trabajo y de las Organizaciones, 30(3), 95.
Obschonka, M., Stuetzer, M. (2017). Integrating psychological approaches to entrepreneurship: the Entrepreneurial Personality System (EPS). Small Business Economics, 49(1), 203-231.
Omorede, A., Thorgren, S., Wincent, J. (2015). Entrepreneurship psychology: a review. International Entrepreneurship and Management Journal, 11(4), 743-768.
Oosterbeek, H., Van Praag, M., Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. European economic review, 54(3), 442–454.
Ozaralli, N., Rivenburgh, N. K. (2016). Entrepreneurial intention: antecedents to entrepreneurial behavior in the USA and Turkey. Journal of Global Entrepreneurship Research, 6(1), 3.
Pesämaa, O., Shoham, A., Khan, M. L., Muhammad, I. J. (2015). The impact of social networking and learning orientation on performance. Journal of Global Marketing, 28(2), 113–131.
Prakash, D., Jain, S., Chauhan, K. (2015). Supportive government policies, locus of control and student's entrepreneurial intensity: a study of India. Journal of Global Entrepreneurship Research, 5(1).
Ratten, V. (2016). Female entrepreneurship and the role of customer knowledge development, innovation outcome expectations and culture on intentions to start informal business ventures. International Journal of Entrepreneurship and Small Business, 27(2), 262–272.

Robson, P. J., Wijbenga, F., Parker, S. C. (2009). Entrepreneurship and policy: challenges and directions for future research. International Small Business Journal, 27(5), 531–535.
Sánchez, J. C., Licciardello, O. (2017). Gender differences and attitudes in entrepreneurial intentions: the role of career choice. JWEE, (1), 7–27.
Sesen, H. (2013). Personality or environment? A comprehensive study on the entrepreneurial intentions of university students. Education+ Training, 55(7), 624–640.
Soomro, B. A., Shah, N. (2015). Developing attitudes and intentions among potential entrepreneurs. Journal of Enterprise Information Management, 28(2), 304–322.
Spurk, D., Kauffeld, S., Barthauer, L., Heinemann, N. S. (2015). Fostering networking behavior, career planning and optimism, and subjective career success: An intervention study. Journal of vocational behavior, 87, 134–144.
Su, Z., Xie, E., Wang, D. (2015). Entrepreneurial orientation, managerial networking, and new venture performance in China. Journal of Small Business Management, 53(1), 228–248.
Tahir, R. (2014). The impact of national and organizational cultural differences on international joint venture performance. IBA Business Review, 9(1).
Tsai, K. H., Chang, H. C., Peng, C. Y. (2016). Extending the link between entrepreneurial self-efficacy and intention: a moderated mediation model. International Entrepreneurship and Management Journal, 12(2), 445–463.
Westhead, P., Solesvik, M. Z. (2016). Entrepreneurship education and entrepreneurial intention: do female students benefit?. International Small Business Journal, 34(8), 979–1003.
Wincent, J., Thorgren, S., Anokhin, S. (2016). Costly Ties: Social Capital as a Retardant of Network Level Entrepreneurial Orientation. Journal of Small Business Management, 54(1), 229–243.
Yousaf, Z., Majid, A. (2018). Organizational network and strategic business performance: does organizational flexibility and entrepreneurial orientation really matter? Journal of Organizational Change Management, 31(2), 268–285.
Zhang, H., Zhang, Y. (2013). Psychological characteristics of Entrepreneurship of college students in China. Psychology, 4(03), 159.
Zhang, P., Wang, D. D., Owen, C. L. (2015). A study of entrepreneurial intention of university students. Entrepreneurship Research Journal, 5(1), 61–82.
Zhao, H., Seibert, S. E., Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. Journal of applied psychology, 90(6).
Zhou, J., Shin, S. J., Brass, D. J., Choi, J., Zhang, Z. X. (2009). Social networks, personal values, and creativity: Evidence for curvilinear and interaction effects. Journal of applied psychology, 94(6).

THE DETERMINANTS OF FOREIGN DIRECT INVESTMENT: EMPIRICAL EVIDENCE FROM KOSOVO

Arben Sahiti*
University of Gjilan "Kadri Zeka",
Republic of Kosovo
arben.sahiti@uni-gjilan.net

Arbena Sahiti
University of Prishtina,
Republic of Kosovo
arbana.sahiti@uni-pr.edu

Rina Zeqiri
University of Prishtina,
Republic of Kosovo
rinazeqiri95@gmail.com

Abstract

The purpose of this research is to analyse the determinants of foreign direct investment (FDI) in Kosovo via extensive review of existing research studies, and via the development of a multiple regression model for identifying key determinants of FDI in Kosovo from 2005 to 2018. Ordinary Least Square (OLS) is the main method used to identify statistically significant determinants of FDI in Kosovo, and the importance of these determinants. Potential FDI determinants are tested at the 5% level of statistical significance. The empirical results find that corporate tax rate, wages, GDP growth rate and interest rates are the determining factors in attracting FDI to Kosovo.

Key Words

Foreign direct investment; determinants; OLS model.

*Corresponding Author

INTRODUCTION

Data on global foreign direct investment (FDI) flows show that in recent years, despite increasing FDI inflows to developing countries, developed economies continue to be the largest recipients of foreign capital. While developing countries have achieved steady, gradual increases in total FDI, they have failed to exploit opportunities arising from economic and financial crises in developed countries. Meanwhile, states in transition are found to be unable to attract FDI flows and influence the reorientation of foreign capital into their markets and economies. FDI has fluctuated globally in recent years, a situation that is creating uncertainty and concern for policymakers. In 2017, total FDI was $1.43 trillion, about 23% less than in 2016 (UNCTAD, 2018). This decline is surprising as macroeconomic variables such as GDP and trade were stable or improved in 2017. The decline in FDI at this level is due to a decrease in FDI in corporate mergers, and to mergers and investments in greenfield. In terms of economies, investments in developing countries have been stable but the decline has affected countries in transition, as well as developed economies (UNCTAD, 2018).

Despite huge international FDI flows and strong investment potential, Kosovo has consistently failed to achieve the desired levels of capital and to persuade renowned corporations to invest in its economy. Kosovo has not been able to capture FDI inflows like other developing economies and has failed to attain the success of neighbouring countries.

THE IMPORTANCE OF THIS STUDY

Determinants of FDI are increasingly important given the dynamics of evolving markets. These determinants are unique to each country because of the characteristics and differences of each economy. The complexity of FDI determinants demonstrates the need to continuously revise investment policies at national and international levels to accommodate changes. Understanding FDI determinants is vital for host countries to get a clearer picture of the factors that influence the flow of foreign capital into their economies. Countries that are able to achieve this objective will emerge victorious and able to attract more FDI (UNCTAD, 2017).

Researchers conducting studies on FDI determinants in countries around the world have found mixed empirical results, according to Sahiti et al., (2018), but there are no studies on Kosovo. At this level, there is a research gap regarding this phenomenon. This research intends to fill this gap. Knowing and understanding empirical evidence on FDI determinants is of paramount importance for Kosovo's policymakers and potential investors. Firstly, FDI flows affect the economic vitality of a nation. The determinants of such flows provide a framework for how policymakers in Kosovo could improve the attractiveness of the domestic market. They also provide a framework for resource allocation to attract FDI according to the importance of different determinants. Secondly, investors need information on FDI determinants in order to decide whether to invest in Kosovo.

This study has two research objectives. The first is to examine the key FDI determinants in Kosovo. The second objective is to evaluate the importance of potential determinants in respect to the flow of foreign capital into Kosovo.

The following research questions are posed to address these objectives: First, what are the main determinants of FDI in Kosovo? Second, what is the magnitude of the relationship between FDI inflows? Third, how can the government of Kosovo improve the domestic business environment to attract more foreign capital based on these determinants?

LITERATURE REVIEW

There are many microeconomic and macroeconomic factors that determine FDI flows from one country to another (Lokesha, Leelavathy, 2012) and, as such, can be used by scientific researchers depending on their objectives. Types of FDI determinants vary from country to country (Economou et al., 2017). Moreover, these determinants differ between regions at the global level. This can be confirmed by the study of Saini and Singhania (2018).

Tax rates

The effect of corporate taxes on FDI flows was studied in 85 countries in 2004, through a questionnaire. The results show that corporate tax rates are negatively related to FDI in production and the size of the informal economy, but not the service industry (Djankov, et al., 2010). The empirical study conducted by Becker et al., (2012), which includes data from foreign businesses in 22 European Union (EU) countries for the period 2000-2006, shows that FDI is negatively correlated with changes in the corporate tax rate, where a 1% increase in the corporate tax rate reduces FDI by 1.4%. Also in this study, the authors argue that countries should worry not only about increasing the amount of FDI, but also about the quality and characteristics of FDI, due to its direct impact on the economy as a result of the intensity of capital investment in production.

The conclusion that higher corporate tax rates negatively affect FDI levels has been confirmed by: Ang (2007) in Malaysia, Bellak and Leibrecht (2009) in Central and Eastern European countries, and by Azam and Lukman (2010) in Pakistan. As for tax rates, not only do countries compete with one another by lowering taxes to attract FDI, but the same phenomenon can be seen in regions within China according to Zhou et al., (2002). Conversely, the study conducted on the importance of corporate taxation for FDI attractiveness in Southeast European countries by Kersan-Škabić (2015) shows that tax rates have not been significant when analysing FDI flows. In this region, Croatia has the highest corporate tax rate at 20% (almost twice the tax rate in most Southeast European countries) yet it has attracted the highest level of FDI.

Labour costs

This variable is mainly measured by wages in a host country. Empirical studies that attempt to explain the relationship between FDI and labour costs show mixed results. According to Bevan and Estrin's (2004) study, labour costs are negatively related to FDI flows, which implies that lower wages stimulate FDI. This study adapts a dataset of bilateral FDI inflows to European Union countries. These results are confirmed by: Vijayakumar et al. (2010) for BRIC states; Wijeweera and Mounter (2008) for Sri Lanka; Kinuthia and Murshed (2015) for Malaysia; and Shamsuddin (1994) for the 34 least-developed states considered.

The positive relationship between labour cost and FDI was confirmed by Sun et al. (2002) for the period of 1987-1991 in China. Most FDI in China in this period came from Hong Kong. Foreign corporations required productive, high-quality workforces and, as a result, were able to offer higher wages to workers rather than train unskilled workers. However, the market price of skilled labour in China during this period was a fraction of that of the developed economies. On the basis of these findings, we can say that the relationship between FDI and wages seems to follow the same trend in developed and less-developed countries, with corporations seeking host countries that offer lower labour costs.

Economic growth and market size

A considerable number of empirical studies conclude that market size and growth has a statistically significant positive impact on FDI inflows. This is confirmed by: Iamsiraroj (2016), whose research includes data from 124 countries in the years 1971-2010; Silajdžić and Mehić (2016) for transitional economies in Central and Eastern Europe; Nistor (2014) for Romania; Pegkas (2015) for Eurozone countries; Suliman et al., (2018) for West Asian countries: and Sirag et al. (2018) for Sudan. Conversely, Belloumi (2014) found that market size and economic growth were insignificant in determining FDI flows for Tunisia in the short run. A negative link has also been found in studies by Irandoust (2016) for Latvia and Lithuania, and Khaliq and Noy (2007) for the mining and quarrying sector in Tunisia.

Interest rates

Empirical studies show different results regarding the relationship between interest rates and FDI. There is a general consensus that real interest rates are negatively correlated with investment in the private sector, and that foreign businesses are discouraged by economies where interest rates are high (Sokunle, 2014). Anna et al. (2012) assessed the impact of interest rates on the economy of Zimbabwe during the period of February 2009 to June 2011, and concluded that interest rates were not determinant and were statistically insignificant in explaining FDI flows. The negative relationship between interest rates and FDI has also been confirmed by Wijeweera and Mounter (2008) for Sri Lanka, and Faroh and Shen (2015) for Sierra Leone. Wijeweera and Clark (2006), in their study on the United States, found that interest rates and FDI had a positive relationships. Other research involving

84 countries confirms that interest rates do not impact FDI flows due to the fact this form of investment is direct and not portfolio investment (Li, Liu, 2005).

METHODOLOGY

The secondary data used in this study were obtained from the databases of the Kosovo Statistics Agency, the Central Bank of Kosovo and the World Bank. The focus in this section is on quantitative methodology, as the determinants of FDI depend largely on structural differences that refer to fundamental discrepancies in the macroeconomic variables that underlie an economy. The quantitative analysis is based on annual data on the variables selected, over a 14-year period from 2005 to 2018. This period was selected due to the availability of data. The literature used in support of this study was provided by international scientific journals, books and credible institutions relevant to the field of study. Data were imported and analysed using an SPSS software package. As this study incorporates yearly data at the state level, the OLS model fits and is the econometric approach used in this research. The same econometric model has been used in many prior studies.

Description of the OLS model and variables

To evaluate potential FDI determinants in Kosovo based on the aforementioned theoretical framework and empirical evidence, this research used the general multiple regression model proposed by Studenmund (2006).

$$FDIt = \beta 0 + \beta 1\ TAXt + \beta 2\ Wage t + \beta 3\ GdpGt + \beta 4\ IRt + \varepsilon$$

Table 1. Description of variables

Independent variables	Acronym	Description of the variables	Unit
Tax	TAX	Corporate tax rate	β1
Wage	Wage	Average wage is divided by retail price index	β2
GDP growth rate	GdpG	The rate at which a country's GDP changes from one year to another	β3
Interest rates	IR	Interest rate adjusted to inflation	β4

Source: Own survey.

The dependent variable is measured by FDI flows in Kosovo where data were obtained from the Central Bank of the Republic of Kosovo. The independent variables are based on theoretical studies and empirical evidence in the literature review cited above. Data on the wage variable was

obtained from the Kosovo Statistics Agency and data on GDP growth and interest rates were taken from a World Bank database.

RESULTS AND DISCUSSION

This section of the study will present the results and findings of the econometric analysis. Explanations of the results will be followed by discussions and possible implications regarding FDI determinants in Kosovo.

Descriptive statistics

The most critical this part of the study are the results of skewness and kurtosis, so the main focus of the analysis is on these two indicators within the descriptive statistics.

Table 2. Descriptive statistics of variables

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
FDI	14	107412815.0	440738143.0	283472068.0	90634738.21	-.243	.597	-.002	1.154
TAX	14	10.00	20.00	12.8571	4.68807	1.067	.597	-1.034	1.154
Wage	14	2.30	5.43	3.8529	1.19846	-.063	.597	-1.840	1.154
GdpG	14	1.20	7.29	3.9921	1.47430	.526	.597	1.395	1.154
IR	14	2.32	17.83	8.9436	4.07588	.735	.597	.634	1.154
Valid N (listwise)	14								

Source: Own survey.

The skewness of variables should not differ significantly from zero for normal distribution of variables (Wooldridge, 2015). According to Wright and Herrington (2011), the values of skewness should be statistically acceptable from -1 to +1. Blaikie (2003) differs, saying that normal values can range from -3 to +3. Based on the results of the descriptive analysis, in which skewness values of variables were around +1 and -1, we can conclude that the variables are within statistically accepted parameters and their distribution is within a normal range.

According to Wooldridge (2015), kurtosis measures the tail thickness of a distribution based on the fourth moment of the standardised random variable, where statistically acceptable values should be from +3 to -3. The kurtosis values of the above results for all variables show that data fit in normal parameters and are statistically acceptable.

ORDINARY LEAST SQUARES (OLS) MODEL

In regression analysis, before evaluating the significance of independent variables on FDI flows in Kosovo, the focus is on collinearity statistics (see first column on the right). According to Wooldridge (2015), it is impossible for the independent variables to have no relation to each other; the acceptable

value when collinearity is not a problem is when the variance influence factor (VIF) on the independent variables is less than 10. Therefore, according to collinearity statistics, the variance inflation values for all the independent variables in the equation are within acceptable parameters. Collinearity is moderate, at tolerance levels, and does not cause problems in model adaptation and interpretation of the impact of independent variables on FDI flows in Kosovo.

Table 3. Regression coefficients of independent variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	802815090.3	165827914.3		4.841	.001		
	TAX	-14155127.30	6108589.995	-.732	-2.317	.046	.321	3.115
	Wage	-85179444.52	23896448.20	-1.126	-3.565	.006	.321	3.115
	GdpG	42737035.42	14097190.94	.695	3.032	.014	.610	1.641
	IR	-20101214.52	5138379.079	-.904	-3.912	.004	.600	1.666

a. Dependent Variable: FDI

Source: Own survey.

First, the tax rate coefficient is statistically significant at 0.046, and is negatively correlated with the level of FDI in Kosovo. This indicates that tax cuts are likely to attract more FDI to Kosovo. The literature confirms that the lower the corporate tax rate, the more chance of attracting foreign investors to the host countries. Such results have been confirmed in studies for developing countries including: Ang (2007), Bellak and Leibrecht (2009), and Azam and Lukman (2010).

Second, the wage with the value of p=0.006 has statistical significance at the 0.05 level, and is negatively correlated with FDI flows. This implies that lower wages stimulate FDI. Therefore, increasing labour costs in Kosovo discourage the flow of FDI. These results are supported by literature which argues that low labour costs are important determinants in attracting FDI, especially in developing countries. The result is confirmed by a number of empirical studies including: Shamsuddin (1994) for the 34 less developed states; Vijayakumar et al. (2010) for BRIC states; Wijeweera and Mounter (2008) for Sri Lanka; and Kinuthia and Murshed (2015) for Malaysia.

Third, regarding economic growth as a potential determinant of FDI in Kosovo, p=0.014 indicates positive significance at 0.05 with FDI inflows, confirming that economic growth positively affects FDI levels. This result is in line with the theory that economic growth presents profit potential for foreign investors because it motivates them to launch new product lines or plan additional investments. We can conclude that the Kosovo market is attractive to horizontal FDI because foreign investors pursuing economic growth aim at profitability within an internal market and potential from economies of scale. Vertical FDI in Kosovo could become attractive in future if the government implements the free economic zones project to attract potential investors to use Kosovo as an export market where foreign businesses can act as distributors for markets or other countries. The result of the variable of

economic growth, and its positive affect on attracting foreign investors, is confirmed by Al Nasser (2007) whose study shows that economic growth has a positive and significant impact on foreign investment in Asia.

Fourth, the interest rate variable is statistically significant with a p value of 0.004 and is negatively correlated with the level of FDI. Therefore, it can be said that lowering interest rates has a positive impact on FDI in Kosovo. Similar findings have been confirmed by researchers in other countries, such as Wijeweera and Mounter (2008), and Faroh and Shen (2015).

CONCLUSION

Based on the regression results we can conclude that corporate tax rate, wages, GDP growth rate and interest rates are determinants of foreign direct investment in Kosovo.

The results show that the corporate tax rate has a positive impact on attracting FDI in Kosovo. This is documented by the negative correlation between FDI flows and tax rate. The government of Kosovo has already lowered the corporate tax rate to levels competitive with other countries in the region, with the exception of Montenegro. Thus, there is no room to further improve this indicator as further reductions would have a negative impact on budget revenues.

In terms of wages, the result is consistent with the literature, which shows that lower labour costs stimulate FDI. Therefore, we can say that FDI in Kosovo is driven by businesses with foreign capital that are looking for markets and efficiencies. The rise in average wages in Kosovo, largely driven by public sector wages and publicly owned enterprises, is expected to encourage professionals to continue to prefer the public sector. If this trend continues, Kosovo may lose its competitive advantage in relation to other countries in the near future.

Econometric analysis has shown that economic growth in Kosovo has a statistically strong relationship with FDI inflows. This result shows that the higher the rate of economic growth, the greater the amount of foreign investment, as this determinant motivates foreign businesses to target the economy of Kosovo. Among the key challenges for Kosovo policymakers in coming years will be to maintain sustainable economic growth to ensure market competitiveness. Forecasts are positive so far, provided that other macroeconomic indicators do not deteriorate.

Finally, the real interest rate in Kosovo shows statistical significance in regard to FDI flows. This is also evidenced by the negative relationship between the variables. Although interest rates have fallen sharply in recent years, they are still high compared to other countries in the region. The Central Bank of Kosovo's monetary policy can reduce interest rates to a level that is competitive within the region, acknowledging the importance of this variable.

REFERENCES

Al Nasser, O. M. (2007). The determinants of the US foreign direct investment: does the region matter? Global Economic Review, 36(1), 37–51.

Ang, J. B. (2007). Determinants of foreign direct investment in Malaysia. Journal of Policy Modeling, 30(1), 185–189.

Anna, C., Karambakuwa, R. T., Webster, D., Felex, T., Zivanai, O., Lovemore, M., Mudavanhu, V. (2012). The impact of interest rates on foreign direct investment: A case study of the Zimbabwean economy (February 2009-June 2011). International Journal of Management Sciences and Business Research, 1(5), 1–24.

Azam, M., Lukman, L. (2010). Determinants of Foreign Direct Investment in India, Indonesia and Pakistan: A Quantitative Approach. Journal of Managerial Sciences, 4(1).

Becker, J., Fuest, C., Riedel, N. (2012). Corporate tax effects on the quality and quantity of FDI. European Economic Review, 56(8), 1495–1511.

Bellak, C., Leibrecht, M. (2009). Do low corporate income tax rates attract FDI? Evidence from Central and East European countries. Applied Economics, 41(21), 2691–2703.

Belloumi, M. (2014). The relationship between trade, FDI and economic growth in Tunisia: An application of the autoregressive distributed lag model. Economic Systems, 38(2), 269–287.

Bevan, A. A., Estrin, S. (2004). The determinants of foreign direct investment into European transition economies. Journal of Comparative Economics, 32(4), 775–787.

Blaikie, N. (2003). Analyzing quantitative data: From description to explanation. London: Sage.

Djankov, S., Ganser, T., McLiesh, C., Ramalho, R., Shleifer, A. (2010). The effect of corporate taxes on investment and entrepreneurship. American Economic Journal: Macroeconomics, 2(3), 31–64.

Economou, F., Hassapis, C., Philippas, N., Tsionas, M. (2017). Foreign direct investment determinants in OECD and developing countries. Review of Development Economics, 21(3), 527–542.

Faroh, A., Shen, H. (2015). Impact of interest rates on foreign direct investment: Case study Sierra Leone Economy. International Journal of Business Management and Economic Research, 6(1), 124–132.

Iamsiraroj, S. (2016). The foreign direct investment – economic growth nexus. International Review of Economics & Finance, 42, 116–133.

Irandoust, M. (2016). Structural changes, FDI, and economic growth: evidence from the Baltic States. Journal of Economic Structures, 5(1), 14.

Kersan-Škabić, I. (2015). The importance of corporate taxation for FDI attractiveness of Southeast European countries. Panoeconomicus, 62(1), 105–122.

Khaliq, A., Noy, I. (2007). Foreign direct investment and economic growth: Empirical evidence from sectoral data in Indonesia. Journal of Economic Literature, 45(1).

Kinuthia, B. K., Murshed, S. M. (2015). FDI determinants: Kenya and Malaysia compared. Journal of Policy Modeling, 37(2), 388–400.

Li, X., Liu, X. (2005). Foreign direct investment and economic growth: an increasingly endogenous relationship. World development, 33(3), 393–407.

Lokesha, B. K., Leelavathy, D. S. (2012). Determinants of foreign direct investment: A macro perspective. Indian Journal of Industrial Relations, 459–469.

Nistor, P. (2014). FDI and economic growth, the case of Romania. Procedia Economics and Finance, 15, 577–582.

Pegkas, P. (2015). The impact of FDI on economic growth in Eurozone countries. The Journal of Economic Asymmetries, 12(2), 124–132.

Sahiti, A., Ahmeti, S., Ismajli, H. (2018). A review of empirical studies on FDI determinants. Baltic Journal of Real Estate Economics and Construction Management, 6(1), 1–11.

Saini, N., Singhania, M. (2018). Determinants of FDI in developed and developing countries: a quantitative analysis using GMM. Journal of Economic Studies, 45(2), 348–382.

Shamsuddin, A. F. (1994). Economic Determinants of Foreign Direct Investment in Less Developed Countries. The Pakistan Development Review, 33(1), 41–51.

Silajdzic, S., Mehic, E. (2016). Absorptive capabilities, FDI, and economic growth in transition economies. Emerging Markets Finance and Trade, 52(4), 904–922.

Sirag, A., SidAhmed, S., Ali, H. S. (2018). Financial development, FDI and economic growth: evidence from Sudan. International Journal of Social Economics, 45(8), 1236–1249.
Sokunle, R. O. (2014). A quantitative study of the relationship between manufacturing sector growth and foreign direct investments, interest rates, inflation, labour costs, and government incentives in sub-Saharan African countries from 2008 – 2010 (Doctoral dissertation). Order No. 3620579
Studenmund, A. H. (2006). Using Econometrics: A Practical Guide (5th Ed.). Boston, MA: Pearson Education, Inc.
Suliman, A. H., Elian, M. I., Ali, H. E. (2018). Endogenous Specification of FDI and Economic Growth: Cross-Economies' Evidence. International Journal of Business, 23(1).
Sun, Q., Tong, W., Yu, Q. (2002). Determinants of foreign direct investment across China. Journal of International Money and Finance, 21(1), 79–113.
UNCTAD (2017). World Investment Report 2017: Investment and the Digital Economy. New York & Geneva: United Nations.
UNCTAD (2018). World Investment Report 2018: Investment and new industrial policy. New York & Geneva: United Nations.
Vijayakumar, N., Sridharan, P., Rao, K. C. S. (2010). Determinants of FDI in BRIC Countries: A panel analysis. International Journal of Business Science & Applied Management, 5(3).
Wijeweera, A., Clark, D. P. (2006). Taxation and foreign direct investment inflows: time series evidence from the US. Global Economic Review, 35(2), 135–143.
Wijeweera, A., Mounter, S. (2008). A VAR analysis on the determinants of FDI inflows: The case of Sri Lanka. Applied Econometrics and International Development, 8(1).
Wright, D. B., Herrington, J. A. (2011). Problematic standard errors and confidence intervals for skewness and kurtosis. Behavior research methods, 43(1), 8–17.
Wooldridge, J. M. (2015). Introductory econometrics: A modern approach. Boston: Nelson Education.
Zhou, C., Delios, A., Yang, J. Y. (2002). Locational determinants of Japanese foreign direct investment in China. Asia Pacific Journal of Management, 19(1), 63–86.

Advances in Business-Related Scientific Research Journal
ABSRJ
geacollege
Faculty of Entrepreneurship

IMPROVING THE EFFICIENCY OF THE VIETNAM STOCK MARKET

Pham T. Nghia*
Peoples' Friendship University of Russia, Russia
nghia.pfur@bk.ru

Tatiana K. Blokhina
Peoples' Friendship University of Russia, Russia
blokhina.pfur@ro.ru

Abstract

The article makes an assessment about the efficiency of Vietnamese stock market in the period 2015-2018. The analysis showed that the Vietnam's stock market did not achieve the weak form of efficiency, indicating the low level of information transparency there. A main reason is that the enterprises had not performed their obligation of information disclosure properly and fully and the quality of published information is inaccurate. Therefore, the government should take appropriate measures to improve the efficiency of the stock market in future.

Key Words

Vietnamese stock market; market of weak form of efficiency; time chain of random walk.

*Corresponding Author

INTRODUCTION

The market efficiency hypothesis was first introduced by Eugene Fama in 1970. In the article “Efficient capital market: a review of theory and practical work he wrote: “The market is called effective if its prices directly reflect the available information” (Fama, 1970). There are three forms of effectiveness: The market with a weak form of efficiency, the market with an average form of efficiency, the market with a strong form of efficiency. It is significant for both the economy and the investors to test the efficiency of the market.

At present, economic growth depends mainly on the development of the capital market (Ananzeh, 2015). Officially, the Vietnamese stock market was created in 2000 as a channel for attracting medium-term and long-term capital to the economy. After almost 20 years of development, this has achieved notable results. According to the Chairman of the State Securities Committee of Vietnam, Chan Van Dung, at the end of 2018, the market capitalization level was 3.96 trillion Vietnamese dongs, which corresponds to 79% of GDP in 2017 and 72% in 2018. And although the Vietnamese stock market has shown rapid growth in recent years, its scale has remained low compared with regional and global indicators, if considered in terms of absolute value and share in GDP. Notably, market capitalization in Thailand reached 548 billion US dollars, in Malaysia 456 billion US dollars, and in Singapore 787 billion US dollars, which accounted for more than 100% of GDP. As for the bond market, its announced volumes reached the size of 1.122.000 billion VNĐ. At the same time, government bonds amounted to 98%, and bonds of enterprises to 2% of the declared value. But the scale of this market is quite modest compared with some countries in the region and elsewhere in the world. The debts on bonds amounted to 35.2% of GDP in 2018, while the debts on government bonds amounted to 27.2%, and on corporate bonds 8.0%, while the Malaysian bond market volumes amounted to 97.7% of GDP, in Singapore 86%, in South Korea 125.7%, and in Japan 211.4% (Dat, 2019).

In September 2018, the Vietnamese State Securities Committee was listed by the FTSE Russel organization as among the list of candidates for a possible rating upgrade, transitioning from the secondary market category of a border frontier market (“Notification of the 10 most notable events related to securities in 2018,” 2018).

Thus, the stock market in Vietnam is developing, but still relatively small in scale. The characteristics of a developing stock market are low liquidity, significant price fluctuations, a large number of non-professional investors, weak trust in information, and strong instability (Angelovska, 2018). So, it becomes necessary to assess the effectiveness of the Vietnamese securities market. The article will focus on evaluating the performance of a weak market relative to the Vietnamese stock market.

LITERATURE REVIEW

In Vietnam, many authors have evaluated the degree of efficiency of the domestic stock market in different time periods. Le Trung Thanh, in his doctoral dissertation "Monitoring Securities Transactions in the Vietnamese Stock Market" (2010), investigated the VN Index chain in the period 2000–2008 and concluded that the market did not reach the weak form of efficiency.

The same conclusions were reached by Nguyen Thi Bao Khuyen (Hoai & Khuyen, 2010), who studied the Vietnamese stock market in the period 2000–2009 and found that a weak form of efficiency was not achieved.

Unlike the first two authors, Phan Khoa Cuong (Phan, Zhou, 2014), who studied the Vietnamese stock market from 2000–2013, concluded that a weak form of efficiency was not initially achieved, but was if taking 2009–2013 as the period. Le Chung Thanh Thao (Thanh, 2013) adheres to the same point of view, studying the Vietnamese stock market in the period 2009–2012 and concluding that a weak form of effectiveness had been achieved.

Moving forward, Pham Dinh Long and Nguyen Thanh Huyen (Long, Huyen, 2017), assessing the effectiveness of the Vietnamese stock market from its inception in 2000–2016, concluded that the market had not achieved a weak form of efficiency.

As reviewing the results of the analysis of the Vietnamese stock market showed, during the research, the authors came to different conclusions related to different time periods. However, it is obvious that during the period of strong fluctuations in the stock market – for example, the stock bubble of 2007–2008 – the weak form of efficiency was not reached. But at the same time, during a period of relative stability, as in 2010–2013, the market easily reached the weak form of efficiency. These provisions will be used by the authors to analyze the 'latest period of development of the Vietnamese stock market.

EMPIRICAL ANALYSIS

The authors tested the weak form levels of Vietnamese stock market efficiency based on the VN-index readings from January 5, 2015 to April 27, 2018 (fixation at the end of the day). The data was obtained from the webpage of JSC "VNDIRECT Securities" (www.vndirect.com.vn/). A chain of VN-Index indicators will be transformed into a natural logarithmic chain of market profit (Hussain, Nath, Bhuiyan, 2017; Strong, 1992). Profit on the market is defined as follows:

$$Y_t = \ln\left(\frac{PI_t}{PI_{t-1}}\right),$$

where Y_t – is the market profit during the observation period;
PI_t – VN-index index in period t;

PI_{t-1} – VN-index index in period *t-1*.

The market is considered effective if the dynamics of stock prices follow the random walk model (RW), i.e. the change in the price of securities cannot be foreseen in advance, and their future change is independent without any definite trend of change (according to Fama, 1970).

The time chain of random walk follows the pattern of a standard distribution. In order to test whether a chain of data follows the standard distribution pattern, the following methods can be used:

- The diagram of the guide curve (histograms with a normal curve) is bell-shaped, symmetrical to the highest frequency immediately in the middle and with decreasing frequency on the sides.
- Standard probability diagram (normal Q-Q plot). The standard distribution of this probability diagram has a linear relationship.
- Application of the Kolmogorov–Smirnov test (K–S test) when the sample size is greater than 50. The distribution is considered standard if the value (sig.) is greater than 0.05.
- Root modular test (unit root test) (Dickey, Fuller, 1979; Dong, Minh, 2012).

The unit root test is used to test the stationarity of the data chain. The least-squares model (OLS) has the following form:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta \cdot Y_{t-1} + \sum_{t=1}^{q} \propto_i \Delta Y_{t-1} + \varepsilon_t ,$$

where: Y_t – price on time *t*;
ΔY_t – price change;
β_1, β_2, δ, α – regression coefficient;
ε – random disturbance;
hypothesis pair check: $H_0 : \delta = 0$, $H_1 : \delta < 0$.

Application of statistical standards τ:

$$\tau_{qs} = \hat{\delta} / \text{Se}(\hat{\delta}),$$

where Se – standard deviation (standard error);
$\hat{\delta}$ – regression coefficient estimate δ.

If the estimated observation $|\tau_{qs}| > |\tau_{1\%}|$, then we conclude that the data chain is stationary, i.e., it does not follow the random walk model. The analysis is based on software SPSS.

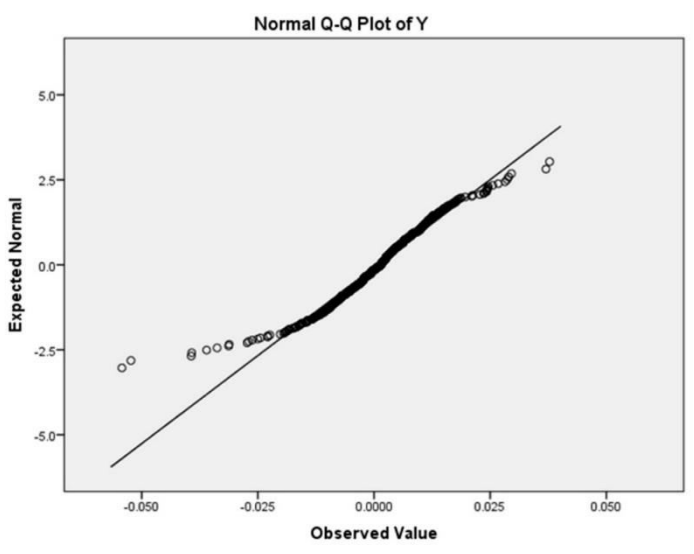
RESULTS

In order to establish whether the data chain follows the pattern of a standard distribution or not, results can be based on the standard probability diagram

(Normal Q-Q plot). Distribution is standard if this diagram has a linear relationship (direct).

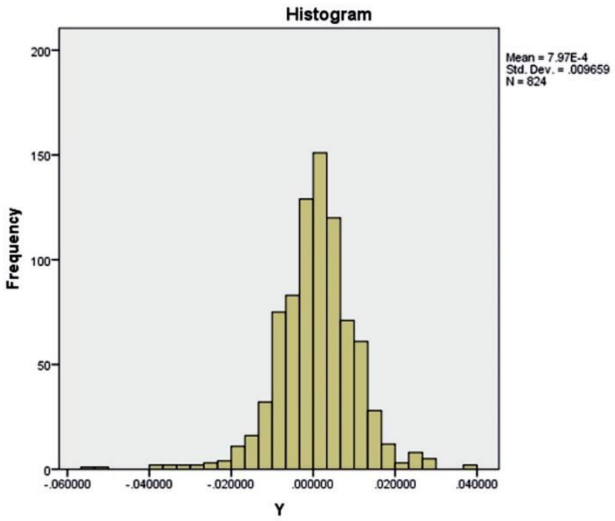
When looking at the standard probability diagram and the probability density distribution, we see that the standard probability diagram does not have a linear relationship (Figure 1), and the probability density diagram has the form of a symmetric bell (Figure 2). Therefore, the profit chain does not follow the standard distribution pattern. However, for a more accurate conclusion, we resort to the Kolmogorov–Smirnov test.

Figure 1. Diagram of standard probability



Source: Own survey.

Figure 2. Graph of Probability Density Distribution



Source: Own survey.

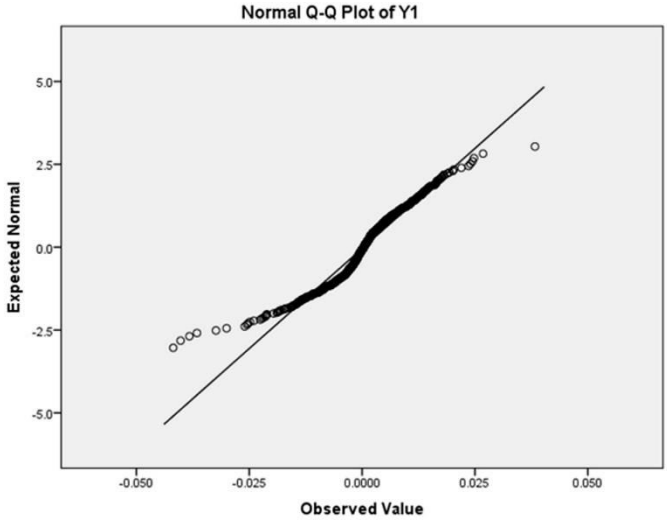
The table of test results (Table 1) shows that the value of the profit chain is less than 0.05. This indicates that this distribution is not standard. Due to the fact that $|\tau_{qs}| = |-12{,}48027| > |\tau_1\%| = |-3{,}435108|$, it should be concluded that the VN-index of profit rate chain is stationary, therefore, does not follow the random walk model. Thus, the Vietnamese securities market did not achieve a weak form of efficiency. This means that moderate and strong forms of effectiveness were not achieved either. In this connection, the market is fraught with many dangers associated with the establishment of control over the prices of securities with insider transactions, which can have a negative impact on the sustainable development of the market. A similar test was conducted with the S & P 500 index of the US stock market (Figure 3).

Table 1. Kolmogorov–Smirnov test

Tests of Normality						
Kolmogorov–Smirnov[a]				**Shapiro–Wilk**		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Y	0.056	824	0	0.957	824	0
Stationarity Test						
				t-Statistic	**Probability[b]**	
Augmented Dickey–Fuller test statistics				-12.48207	0	
Test critical values:		1% level		-3.438110		
		5% level		-2.864855		
		10% level		-2.568589		
Augmented Dickey–Fuller Test Equation						
Dependent Variable: D(Y)						
Method: Least Squares						
Sample (adjusted): 6,824						
Included observations: 819 after adjustments						
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**		
Y(-1)	-0.896683	0.071838	-12.48207	0		
D(Y(-1))	-0.043197	0.064724	-0.667404	0.5047		
D(Y(-2))	-0.005731	0.057076	-0.100404	0.9200		
D(Y(-3))	0.025562	0.047854	0.534174	0.5934		
D(Y(-4))	0.024572	0.034486	0.712525	0.4763		
C	0.000763	0.000336	2.271869	0.0234		
R-squared	0.471363	**Mean dependent var**		-1.62E-05		
Adjusted R-squared	0.468112	**S.D. dependent var**		0.012989		
S.E. of regression	0.009473	**Akaike info criterion**		-6.473462		
Sum squared resid	0.072955	**Schwarz criterion**		-6.438971		
Log likelihood	2656.883	**Hannan–Quinn criter.**		-6.460227		
F-statistic	144.9835	**Durbin–Watson stat**		1.948497		
Probability (F-statistic)	0					

Note: [a] Lilliefors Significance Correction; [b] MacKinnon (1996) one-sided p-values.
Source: Own survey.

Figure 3. Diagram of Standard Probability relative to the S & P 500 Index



Source: Own survey.

The table of test results (Table 2) shows that the value of the profit chain is less than 0.05. This indicates that this distribution is not standard.

Due to the fact that $|\tau_{qs}| = |-14{,}05436| > |\tau_1\%| = |-3{,}438014|$, it should be concluded that the S & P 500 index profit rate chain is stationary, therefore, does not follow the random walk model.

It can be seen that the US stock market during this period experienced many fluctuations, especially under the influence of tense US-China trade relations, though without achieving a weak form of efficiency.

Table 2. Kolmogorov–Smirnov test relative to the S & P 500 Index

Tests of Normality						
Kolmogorov–Smirnov[a]				**Shapiro–Wilk**		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Y	0.109	834	0	0.94	834	0
Test for Stationarity Relative to the S & P 500 Index						
				t-Statistic	**Probability[b]**	
Augmented Dickey–Fuller test statistics				-14.05436	0	
Test critical values:		1% level		-3.438110		
		5% level		-2.864855		
		10% level		-2.568589		
Augmented Dickey–Fuller Test Equation						
Dependent Variable: $D(Y_1)$						
Method: Least Squares						
Sample (adjusted): 6,834						
Included observations: 829 after adjustments						
Variable		**Coefficient**	**Std. Error**	**t-Statistic**	**Probability**	
Y(-1)		-1.171031	0.083322	-14.05436	0	
D(Y(-1))		0.150766	0.073308	2.056612	0.0400	
D(Y(-2))		0.061388	0.063013	0.974217	0.3302	
D(Y(-3))		0.086177	0.049841	1.729061	0.0842	

D(Y(-4))	0.021207	0.034954	0.606715	0.5442
C	0.000392	0.000288	1.362216	0.1735
R-squared	0.516420	**Mean dependent var**		-1.08E-05
Adjusted R-squared	0.513482	**S.D. dependent var**		0.011829
S.E. of regression	0.008251	**Akaike info criterion**		-6.749828
Sum squared resid	0.056025	**Schwarz criterion**		-6.715665
Log likelihood	2803.804	**Hannan–Quinn criter.**		-6.736726
F-statistic	175.7783	**Durbin–Watson stat**		1.998233
Probability (F-statistic)	0			

Note: [a] Lilliefors Significance Correction; [b] MacKinnon (1996) one-sided p-values.
Source: Own survey.

DISCUSSION

Market efficiency theory plays an important role in the development of the securities market. If the market is efficient, then the value of the securities fully reflects information about their price, i.e. reflects the exact value of the securities. Then the sources of market funds will be used most efficiently. The securities market will correctly fulfill its role if it becomes a channel for attracting the capital of enterprises and efficient investments for investors, including the general public. In Vietnam, the stock market has not yet achieved efficiency for the following main reasons.

To begin with, the transparency of published information is low. According to the joint research of the Vietstock webpage and the Finance and Life newspaper (*www.Fili.vn)* – the press agency of the Vietnamese Financial Management Association (VAFE) (2017) focused on assessing the compliance of activities when publishing information on the Vietnamese stock market – the number of enterprises that accurately and fully comply with the obligation to publish information has increased annually (Figure 4). Especially in 2016, when growth was almost twice as high as in 2015.

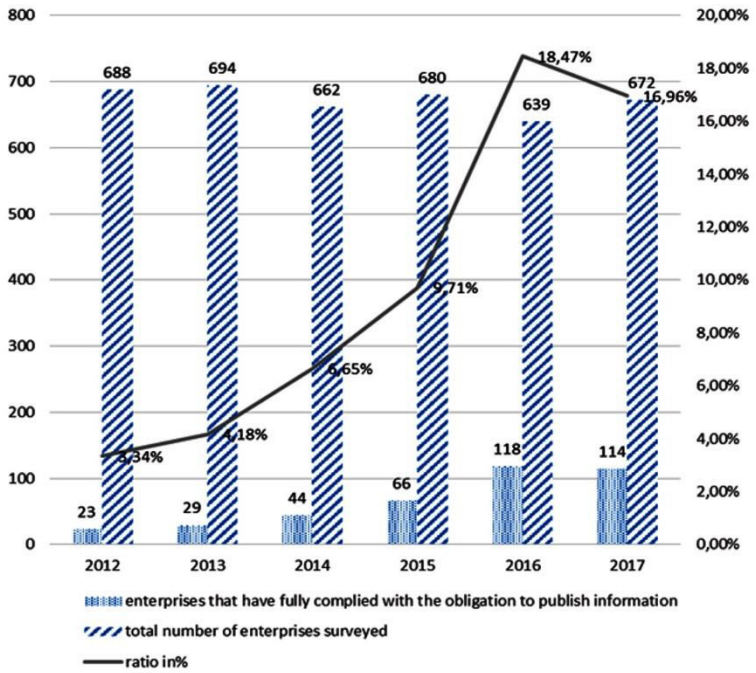
However, there are still few enterprises that fulfill the obligation to publish information accurately and in full. The highest rate for the year 2016 was only 18.5% of the total number of investigated declared enterprises. At the same time, the group of enterprises with a high level of capitalization on the market accounted for the bulk of the fulfillment of these obligations (114 enterprises that met the criteria for publishing information had a total capitalization value of 871.065 billion VNĐ, while in 558 companies this was only 803.065 billion VNĐ). In 2017, this figure fell to 16.96%.

The quality of the information published by Vietnamese enterprises remains at a low level, while the quality of financial reports submitted by public companies is also not up to par. Many enterprises do not also consider the preparation of annual reports important, and their practical content is very superficial.

According to the statistical reports, 540 of the 709 enterprises surveyed found errors in the published financial statements (which amounted to 76.2%). Moreover, 5 enterprises turned from profitable to unprofitable and there was not a single enterprise that would become profitable after an audit

from unprofitable. Many enterprises that had a profit after taxes, after an audit, have undergone changes that cost hundreds of billions VNĐ.

Figure 4. Declared Enterprises That Fulfilled the Criteria for Publishing Information in 2012–2017



Source: www.fili.vn.

Enterprises stated many other reasons related to the difference in performance before and after the audit, for example, recording errors, or various approaches to auditors related to preliminary calculations in reserve, depreciation, distribution, warehousing, or the year of recording income or expenses. However, the reason for the intentional erroneous financial information on the part of the company's management for the purpose of short-term price increases on shares, especially in conditions of a complete change in the results of economic activity from profitable to loss-making and vice versa, was not excluded. After all, this situation was repeated not just once but continued on the same enterprise several times (Lan, 2017).

In the Vietnamese stock market, a low degree of information transparency remains. Therefore, investors and governments cannot receive timely, accurate and complete information. As this connection shows, the Vietnamese securities market has not achieved efficiency.

Furthermore, the professionalism of Vietnamese investors, who are mostly private investors, is still at a low level. According to statistics from the State Securities Committee on the Vietnamese securities market, up to 99% of investors are private individuals. However, many of them are not professionals and have a low education level. On the other hand, the stock market is a complex market form, which is difficult to master even for

investors with a higher education in economics. The presence in the market of a large number of investors who are not specialists leads to the fact that they often make decisions about investing based on emotions, as opposed to observing where the market is going. It is difficult for these investors to avoid the race for profit in a period when there is a rapid stock market growth.

CONCLUSION

The concept of stock market efficiency is extremely important for investors and managers. In an efficient stock market, sources of funds are provided for projects that give the highest efficiency. Along with this, in the effective securities market, investors do not have the possibility of obtaining unexpected market profits (Angelovska, 2018). These studies were carried out by evaluating the weak form of Vietnamese stock market efficiency. The sample of data used is a chain of VN-index indicators from January 5, 2015 to April 27, 2017. The applied tests of Kolmogorov–Smirnov and the unit root test indicate that at the moment the Vietnamese stock market has not achieved a weak form of efficiency. This result is largely correlated with the lack of transparency of information on the Vietnamese securities market (Lan, 2017).

A socialist economy with the state economy playing a leading role is being developed in Vietnam. However, the state-owned enterprises have been operating ineffectively and inefficiently for a long time. Vietnam has around 3,000 state-owned enterprises, about 500 out of which have 100% equity ("General Statistics Office of Vietnam," 2007). In spite of equitizaton, many state-owned enterprises still hold a majority of stocks. It is a major barrier to information transparency.

For this reason, it is necessary for the government to promote equitization and divestment of the state-owned enterprises, improve the policies and enhance monitoring in order to improve the efficiency of stock market in future.

REFERENCES

Ananzeh, I., Eddien N. (2015). Weak form efficiency of the Amman stock exchange: An empirical analysis (2000-2013). International Journal of Business and Management, 11 (1), 173–180.

Angelovska, J. (2018). Testing weak form of stock market efficiency at the Macedonian stock exchange. UTMS Journal of Economics, 9 (2), 133–144. Retrieved from https://ideas.repec.org/a/ris/utmsje/0244.html

Dat, T. (2019). New opportunities of Vietnam stock market. Online Newspaper of the Government of the Socialist Republic of Viet Nam. Retrieved from http://baochinhphu.vn/Thi-truong/Co-hoi-moi-cua-thi-truong-chung-khoan-Viet-Nam/357967.vgp

Dickey, D. A., Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. Journal of the American Statistical Association, 74(366), 427–431.

Dong, N. Q., Minh, N. T. (2012). Econometric course. Hanoi: Publishing house "University of National Economy."

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. The Journal of Finance, 25(2), 383–417.

General Statistics Office of Vietnam. (2007). Retrieved April 2, 2020, from Statistical Documentation and Service Centre—General Statistics Office of Vietnam website: https://www.gso.gov.vn/Default_en.aspx?tabid=491

Hoai, N. T., Khuyen, N. T. B. (2010). Stock prices and macroeconomic variables in Vietnam: An empirical analysis. Journal of Economic Development, 190, 61–85.

Hussain, S., Nath, S. K. D., Bhuiyan, Md. Y. A. (2017). Weak form efficiency of the Chittagong stock exchange: An empirical analysis (2006-2016). International Journal of Business and Social Research, 6(11), 58.

Lan, L. T. H. (2017). On the issue of transparency of information of declared enterprises on the Vietnamese securities market. Collection of Materials of the Conference "Improving Financial Institutions for the Sustainable Development of the Securities Market and the Insurance Market in Vietnam." Hanoi: Publishing House of the University of National Economy, 127–142.

Long, P. D., Huyen, N. T. (2017). Assessment of the market efficiency hypothesis on the Vietnamese stock market. Banking Technology, 137, 50–61.

Notification of the 10 most notable events related to securities in 2018. (2018, December 27). The Financial Bulletin of Vietnam. Retrieved from http://thoibaotaichinhvietnam.vn/pages/chung-khoan/2018-12-27/cong-bo-10-su-kien-chung-khoan-noi-bat-nam-2018-65987.aspx

Phan, K. C., Zhou, J. (2014). Market efficiency in emerging stock markets: A case study of the Vietnamese stock market. IOSR Journal of Business and Management, 16(4), 61–73.

Strong, N. (1992). Modelling abnormal returns: A review article. Journal of Business Finance & Accounting, 19(4), 533–553.

Thanh, L. C. (2013). Efficient market and signaling hypothesis on Vietnam securities market 2009-2012 (Bachelor thesis, International University HCMC, Vietnam). Retrieved from http://keep.hcmiu.edu.vn/handle/123456789/941

Thanh, L. T. (2010). Supervision over operations with securities in the Vietnamese stock market (Doctoral thesis). University of National Economy, Hanoi, Vietnam.