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HIGHER EMPLOYEE COMMITMENT BY STRONG PEOPLE MANAGEMENT SYSTEM

Anita Kozak¹

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Abstract: *The purpose of this article is to reveal whether there are any relationships between the components of people management, the dimensions of the employees' commitment and the socio-demographic characteristics of the interviewees. Furthermore, it is also the goal of this article to find out if there are any correlations between the two areas mentioned above. To carry out our research, we performed a primary examination among the students of the Faculty of Economics and Social Sciences at the Eszterházy Károly University in Eger, Hungary. The questionnaire was filled out by 410 people. We applied several mathematical and statistical methods to analyze the data. We can conclude from the results that the respondents' age, position and the size of their salaries are in relation to the judgment of people management and the extent of their commitment. In addition, people management is related to the size of the organization and the commitment is related to the time of employment. During our examinations to reveal the relationships between these two areas, it also turned out that all four components of people management are in connection with the affective, normative, professional, team-oriented and career-oriented types of commitment.*

Keywords: *Employees, Commitment, Management.*

JEL Classification M54 · J53 · M12

✉ kozak.anita@uni-eszterhazy.hu

¹ Eszterházy Károly University, H-3300 Eger, Egészség ház street 4, Hungary

1. INTRODUCTION

Researchers and professionals have been studying the employees' commitment for decades now. Years ago, when the economic environment was characterized by labor shortage, this was an especially popular field of research. The key question is what sort of workplace environment is needed for the organizations to be able to retain their current labor force so that the labor shortage would not impede their economic performance. Therefore, our examinations were focused on the effects the organizational environment, the processes and the systems have on the employees' commitment. The literature defined the precise content of people management only a few years ago. This includes the HR practices and their enforcement by managers; it is more and more common that the authors studying organizational psychology and management do not examine only one function and its effects but they explore the relationships and consequences of complex systems and phenomena. Since the new people management is still a scarcely examined field, we thought that it was important to reveal its correlations with the employees' characteristics and the relationship with the employees' commitment.

2. THE CONCEPT OF THE EMPLOYEES' COMMITMENT AND THE RELATED RESEARCH

Researchers have been actively studying the employees' commitment since the 1960s. According to Becker (1960), the committed conduct develops because the employees realize the losses they would suffer if they left the organization and in order to avoid such losses, they maintain their committed conduct. The consideration and judgment of the losses are influenced by several factors (Parsons 1964), and the early studies related the employees' personal characteristics (Hrebiniak 1971; Hrebiniak – Alutto, 1972), the type of work the employees were doing (Argyris, 1964; Grusky, 1966; Thornton, 1970) and the particular features of their workplaces (Hall – Schneider, 1972; Dubin et al., 1976) to the extent of their commitment.

Beyond the personal characteristics, the type of work and the organizational factors, the researchers started to examine the emotional dimensions of the employees' commitment and they tried to explore these along the organizational integration (Smith et al, 1983). At that time, the commitment examinations were primarily based on the aspect of emotional identification and later they revealed the relationship with several variables, like some factors of the employees' satisfaction with their work (Mowday et al. 1982; Gerhart – Judge, 1991); or workplace ethics and the role of one's work in one's personal life or one's commitment to the trade unions (Morrow, 1983).

Regarding the employees' commitment, the researchers later found out that the employees' commitment to their organization can develop not only emotionally but it can also be affected by other factors and circumstances. One of the related theories was devised by Allen and Meyer (1990). These two authors created the so-called three-component model of commitment: 1. affective commitment, one is committed to the organization emotionally, 2. continuance commitment, one is attached to the organization because this is the best for the individual for some reason and 3. normative commitment, one feels morally obliged to maintain their membership in the organization (Allen – Meyer, 1990).

The two authors found that all three components have a negative correlation with the employees' intention to quit but the affective commitment has the strongest and most favorable correlation with the factors which are the most relevant from the viewpoint of the organization and are important from the employees' viewpoint (Meyer et al. 2002). Thus, the emotional commitment can be regarded as the most valuable organizational conduct. This means an emotional relation-

ship which is by all means beneficial for the organization (Wasti, 2003). Apart from these three components of commitment, the literature also mentions the professional commitment, the career-oriented and the team-oriented commitments. These types of commitment do not describe the employees' commitment toward the organization. These types of commitment rather express the individual's identification with their chosen profession and their professional community. The professional commitment can be defined as a conduct where the individual is able to identify themselves with their chosen profession, they accept the professional goals and the ethical norms (Mueller et al. 1992). The commitment to one's career is characterized by one's identity awareness, their conviction improvement and the strong participation in one's own active career activities. In other words, this is the individual's commitment toward a career goal (Colarelli – Bishop, 1990). The team-oriented commitment is the individual's commitment toward the goals of the professional workgroup and the values they represent. Therefore, there is some contrast between the career-oriented and the team-oriented commitments since the individual seeks to achieve their own career goals or the goals of their workgroup (Ellemers – Gider, 1998).

The content of people management

The concept of people management is quite difficult to define. The related literature defines it as the human resources functions and policies and their enforcement by lower-level managers (Caulkin, 2001). These two things must go together since it can be proven that a strong HR system combined with good leaders can create stronger relationships between the HR management, the workplace atmosphere and the employees' performance than these factors separately (Bowen – Ostroff, 2004). The correlation between people management and the workplace performance has already been revealed by several researchers. Marchington – Wilkinson (2002) note that between the beginning of the 1990s and the beginning of the 2000s more than 30 papers were published in the US and the UK which confirm the positive correlation between people management and the organizational performance. The authors found that well-functioning people management affects all organizations beneficially, regardless their size, activity and national culture.

The significance of people management is pointed out even by the Leader-Member Exchange Theory (LMX). According to this theory, the quality of the LMX connection and the appreciation of the leader as a human being contribute to the strength of the HR processes (Graen – Uhl-Bien, 1995).

However, people management is not a popular field of research among the experts studying organizational psychology and HR. It might come from this that the authors have reached an agreement on the precise content of people management only in the past years (Table 1).

Table 1. A conceptualization of people management

People management			
Implementation of HR practices		Leadership behaviour	
General practices	Tailor-made arrangements	Support of commitment	Support of career development

Source: Author's own compilation, based on Knies et al. (2017)

According to the literature, the following HR functions belong to the general practices:

- training and development,
- transition to another job,
- appraisal,

- compensation and benefits,
- changes in job design (e.g. changes in tasks, career advice),
- vitality (e.g. prevention and health),
- work-life balance (e.g. flexible hours, leave, working from home).

Tailor-made arrangements mean those activities of the immediate superior where the individual living conditions, the status and needs of the employees are taken into account. The support of commitment is the interest (employee-centeredness) the immediate superior shows toward the employees, while the support of career development means the superior's attention toward the development of the employees' careers (Knies et al., 2017).

3. CORRELATIONS BETWEEN THE EMPLOYEES' COMMITMENT AND PEOPLE MANAGEMENT

The connection between the components of people management and the employees' commitment was proven by Knies – Leisink (2013). According to their results, there is a positive connection between the commitment and the general HR practices, the tailor-made arrangements and the support of commitment components of people management. The authors used the Allen-Meyer (1990) scale of commitment measurement but they related people management only to the emotional commitment. With reference to the work of Ellemers – Gider (1998)², they did not measure the employees' commitment to the given organization but the commitment to the workgroup. Thus, the word 'organization' was replaced with 'team' in the measurement scale.

4. METHODOLOGY

In order to reveal the connection between people management and the dimensions of commitment, we conducted primary examinations among the students of the Faculty of Economics and Social Studies at the Eszterházy Károly University. We sent out the questionnaires online to the students of the faculty and also to the participants of professional trainings organized by the faculty. The data were recorded in September and October 2019. The respondents answered the questions related to people management and organizational commitment on a scale of 1 to 6 (1 = not at all, 6 = totally). The statements on people management were examined with the help of (Knies et al. 2017), while the items on organizational commitment were examined along the Allen- Meyer's (1990) model's affective continuance and normative commitments. We also used the findings of Ellemers – Gider (1998) on the career-oriented and the team-oriented commitments and the findings of Aranya et al. (1981) on professional commitment. The measurement tools were translated into Hungarian in accordance with the scientific standards. The basic statistical population is 410 individual tests. By combining the questions on people management and the dimensions of commitment, we created new variables. After taking the correlational coefficients into account, we found that these new components (which were combined after averaging the values given to the questions) were suitable to describe people management and the commitment. We applied the methods of descriptive statistics (frequency and average) in our analysis. To reveal the correlations between people management and the dimensions of commitment we used Spearman's rank correlation test. To reveal the connections with the socio-demographic variables, we performed non-parametric tests (Mann-Whitney and Kruskal-Wallis). We considered the results of the statistical tests significant at the value of $p < 0,05$. Regarding the sex of the employees involved in the research, we can state that 69.3% of them (284 people) were women and 30.7% were men (126). According to their ages, 5.6% of them (23) were born between 1946 and

² According to Ellemers – Gider (1998), the commitment to the workgroup affects the employees' intention to quit at a greater extent than the affective commitment to the organization.

1964 (baby boomers), 38.3% (157 people) were born between 1965 and 1979 (generation X), 47.6% (195 people) were born between 1980 and 1995 (generation Y), 8.5% (35 people) were born after 1995 (generation Z). As for their qualifications, 2.7% of the respondents (11 people) have completed the elementary school, 39.5% (162 people) have completed the high school and 57.8% of them (237 people) have completed higher education. 15.6% of the respondents (65 people) had been working for less than 3 months, 21.2% of them (87 people) had been working for 3 months to 1 year, 22.4% of them (92) had been working for 1 to 3 years, 40.5% of them (166 people) had been working for 3 to 6 years at their current workplaces. The sample did not include the individuals working for the same organization for more than 6 years. According to the answers, regarding the judgment of their salaries and compared to similar workplaces, 14.6% of them (60 people) consider their salaries to be above average, 69.3% (284 people) think their salaries are average, while 16% (66 people) consider their salaries to be below average. Almost a quarter of the respondents (24.6%, 10 people) work in managerial positions, about three quarters of them (75.4%, 309 people) are employees. Most respondents (51.2%, 210 people) work for large businesses, many of them (26.8%, 110 people) work for medium-sized businesses and only a few of them (12.7%, 52 people) work for small businesses and 9.3% (38 people) work for micro businesses.

5. RESULTS

The answers given to the questions on people management yielded a strongly average value (Figure 1). The lowest value (2.99) was given to the questions on supportive HR practices, while the questions on the tailor-made arrangements and the support of the employees' commitment received the highest values (3.91).

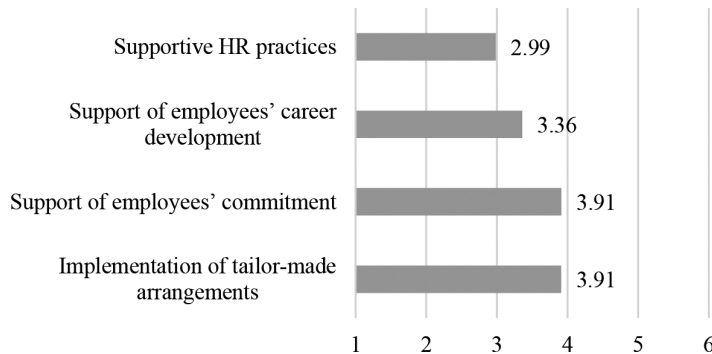


Figure 1. The average values given to the questions of people management
Source: Author's own compilation based on own examinations, 2020

The low value for the supportive HR practices might be explained with the fact that in Hungary (in contrast with the US or other European countries), the rate of companies with no HR staff at all is quite high. Also, Hungary is quite behind other countries regarding HR policies and strategies (Kovács, 2017).

During the detailed examinations, it turned out that there are significant differences in the judgment of people management according to the individual socio-demographic variables. The non-parametric tests showed differences in case of the respondents' sex, position, salaries and the size of the organization they work for.

According to our analyses, the older age group the respondents belong to, the more critical they are toward the HR practices. It might be so because most of the older respondents (baby boomers

and generation X) have already reached the highest point in their careers and they regard the various HR activities less supportive. Those in managerial positions have a more direct experience in their immediate superiors' commitment and career-developing supportive activities than the employees (probably due to their high positions). Those who have higher salaries are also much more satisfied, they gave much higher average scores ($p=0,000$) regarding all four people management components. We think it is interesting that the larger a business is, the lower the scores are regarding the tailor-made arrangements and the committed conduct (in case of the latter one, the Kruskal-Wallis test did not show any significant differences along the group-forming factor); however, the results of the average examinations show that the employees gave different scores regarding the activities which support commitment: 4.34 in case of the micro businesses, 4.02 at the small businesses, the medium-sized businesses gave 3.98 and the large businesses yielded 3.80). The background of these results might be that with a smaller number of employees, the employees' individual requests receive much more attention. Also, it is easier to form the employees' emotional commitment toward the organization in a more familial atmosphere. The average scores for the dimensions of commitment are shown in Figure 2.

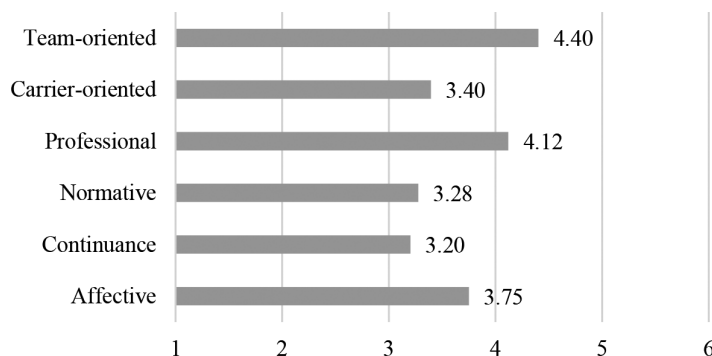


Figure 2. The average scores given to the questions on the dimensions of commitment
Source: Author's own compilation, based on own examinations, 2020

Regarding the average scores of the various dimensions of commitment, the team-oriented one received the highest score (4.40), the next one is the professional commitment with 4.12, then the affective one with 3.75 and then the career-oriented commitment with 3.40. The normative component received 3.28 and the continuance 3.20. In the three-component model, the affective component is considered to be the most valuable one. In view of this, our results are positive. However, the high score for the professional commitment makes the whole picture look different. According to Kallerberg – Berg (1987), there is a contrary relationship between the professional commitment and the commitment toward the organization.

According to our detailed examinations on commitment, there is a correlation between the respondents' age group, their time of employment, position and salaries and the average scores of the dimensions of commitment.

The age-related results have confirmed the findings of other authors. The higher the age is, the higher the scores are for the normative, affective and professional components, while the scores for the career-oriented commitment are lower (Meyer – Allen 1984; Miner 1993, Ellemers – Gider, 1998). In case of the time of employment, we can state that the longer the respondents are employed, the stronger the respondents' affective, continuance and normative commitments are. It might be explained with the fact that as time passes, the commitment toward the organization

becomes stronger. Our calculations show that managers have higher affective, normative, professional and team-oriented commitments. This partly confirms the results of earlier examinations (Liou – Nyhan, 2003), the higher team-oriented commitment might come from the responsibilities of the higher positions. The salary-related examinations show that the respondents with above average salaries have stronger emotional, normative, professional and career-oriented commitments than those who have average or below average salaries. This result is completely in agreement with the results of other authors (Rizqui – Saptoto, 2015; Mosadeghrad – Ferdosi, 2013; Lipinskienė, 2008; Wang et al., 2010; Ellemers – Gider, 1998).

The correlation coefficients describing the connection between the components of people management and the dimensions of commitment are shown in Table 2.

Table 2. Correlation coefficient values between the components of people management and the dimensions of commitment

	Affective	Continuance	Normative	Professional	Career-oriented	Team-oriented
Tailor-made arrangements	0.362	-0.030	0.282	0.254	0.069	0.089
Support of commitment	0.475	0.049	0.359	0.361	0.210	0.273
Support of career development	0.455	0.074	0.363	0.375	0.259	0.292
Supportive HR practices	0.469	0.005	0.381	0.311	0.244	0.211

Source: Author's own compilation, based on own examinations, 2020

According to our results, the components of people management and the affective, normative, professional, career-oriented and the team-oriented dimensions of commitment are also connected. We found the strongest connection in case of the affective commitment which is best correlated with the HR practices and the manager's activities supporting commitment and career development (as we mentioned before, the affective commitment is the most beneficial for the organization among the three components of the model). Although the connection is not so strong, the normative and professional dimensions of commitment are also in connection with the components of people management. This might mean that the manager's supportive conduct and the well-functioning HR practices might strengthen the employees' commitment toward the organization and their profession not only emotionally but also morally and professionally. It is a favorable result that the continuance commitment does not have any connection with any of the people management components, since the employees with high continuance commitment would immediately quit for a better job opportunity. It is interesting that the correlation coefficients are almost the same in case of the support of career development, the career-oriented and the team-oriented commitments. This indicates that the support of career development does not exclusively mean higher career-oriented commitment but it might result in stronger team-oriented commitment as well.

6. CONCLUSION

This article examines the people management components and the dimensions of the employees' commitment. Our people management-related results point out in general that the organizations our respondents work for should have more supportive and more professional HR practices. It would be worth putting more emphasis on generation management as well. The organizations should create

processes and tools which could make HR activities more friendly for the older generations (e. g. a system of sharing knowledge within the organization, mentoring programs, integrating the financial and moral appreciation of the employees' loyalty into the company's incentive system etc.). In addition, it would be reasonable if the managers at large companies paid more attention to the activities supporting the employees' commitment and their individual living conditions and circumstances. This could be done by reducing the managers' burden of work and by creating smaller workgroups. The results of our commitment-related examinations have mostly confirmed the results of previously conducted studies in this field. We have found correlations between the respondents' age groups, time of employment, positions and the amount of their salaries and the average scores of the various commitment dimensions. As we have experienced, the younger generations need a different kind of commitment-supporting circumstances and activities than the older generations. As the employees spend more time with the same organization, their intention to leave decreases. The employees' commitment can also be increased in a more direct way, by promoting them to higher positions or by raising their salaries. We managed to prove the correlation between the components of people management and the dimensions of commitment. By surpassing the findings of Knies – Leisink (2013), we can state that in our sample, people management is connected to not only the affective commitment but it is also related to the normative, professional, team-oriented and career-oriented commitments. The well-organized human resources management and its enforcement by lower-level managers may greatly contribute to the high level of the employees' commitment. Thus, it is worth putting more emphasis on the functions and activities and continuously reviewing their efficacy.

One of the limitations of our research is the non-representative sampling. It would be reasonable to explore the sectoral characteristics of people management and to examine the factors affecting them.

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REFERENCES

- Allen N. J. – Meyer J P (1990). The Measurement and Antecedents of Affective, Continuance and Normative Commitment to the Organization. *Journal of Occupational Psychology*, 63(1) 1-18.
- Aranya, N. – Pollock, J. – Amernic, J. (1981). An examination of professional commitment in public accounting. *Accounting, Organizations and Society*, 6(4), 271-280.
- Argyris, C. (1964). *Integrating the Individual and the Organization*. New York: John Wiley
- Becker, H. S. (1960). Notes on the concept of commitment. *American Journal of Sociology*, 66(1), 40-53.
- Bowen, D.E. – Ostroff, C. (2004). Understanding HRM-firm performance linkages: the role of the “strength” of the HRM system. *Academy of Management Review*, 29(2), 203–221.
- Caulkin, S. (2001). *The time is now, People Management*. 30 August 2001, pp. 32-34. Central Arbitration Committee. Annual Report 2000-2001. London
- Colarelli, S.M. – Bishop, R.C. (1990). „Career Commitment: Functions, Correlates and Management”. *Group and Organization Studies*, 15 (2), 158 – 78.
- Dubin, R., Hedley R. and Taveggia T. (1976). Attachment to work. in: R. Dubin (eds.) *Handbook of Work, Organization, and Sociology*. Skokie: Rand McNally, 281-341.

- Ellemers, N. – Gider, D. (1998). Career-Oriented Versus Team-Oriented Commitment and Behavior at Work. *Journal of Applied Psychology*, 83(5), 717-730.
- Gerhart, B. A. – Judge, T. A. (1991). Measures of new constructs or old ones? The case of organizational commitment and job satisfaction - CAHRS Working Paper, Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies
- Graen, G. B. – Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, 6(2), 219–247.
- Grusky, O. (1966). Career mobility and organizational commitment. *Administrative Science Quarterly*, 10(4), 488-503.
- Hall, D. T. – B. Schneider (1972). Correlates of organizational identification as a function of career pattern and organizational type. *Administrative Science Quarterly*, (17)3, 340-350.
- Hrebiniak, L. G. – Alutto, J. A. (1972). Personal and role-related factors in the development of organizational commitment. *Administrative Science Quarterly*, 17(4), 555-573.
- Hrebiniak, L. G. (1971), A Multivariate Analysis of Professional and Organizational Commitment Orientations Among Teachers and Nurses, Doctoral Dissertation, State University of New York at Buffalo
- Kallerberg, A. – Berg, I. (1987). *Work and industry: structures, markets and processes*. New York: Plenum. 99.
- Knies, E. – Leisink, P. (2013). Linking people management and extra-role behaviour: results of a longitudinal study. *Human Resource Management Journal*, 24(1), 57–76.
- Knies, E. – Leisink, P. – Schoot, R. (2017). People management: developing and testing a measurement scale. *The International Journal of Human Resource Management*. Published online: 23 Oct 2017
- Kovács I. É. (2017). Quo vadis HRM? PhD thesis, Szent István University, Gödöllő, Hungary
- Liou, K. – Nyhan, R. (2003). Dimensions of organizational commitment in the public sector: An empirical assessment. *Public Administration Quarterly*, 18(1), 99-118.
- Marchington, M. – Wilkinson, A. (2002). *People Management and Development* 2nd ed. Chartered Institute of Personnel and Development, London
- Meyer, J. P., Stanley, D. J., Herscovitch, L., and Topolnytsky, L. (2002), „Affective, continuance, and normative commitment to the organization: a meta - analysis of antecedents, correlates and consequences”, *Journal of Vocational Behavior*, 61 1, 20-52
- Miner J. (1993). *Role Motivation Theories*. Routledge: London
- Morrow, P. C. (1983). Concept Redundancy in Organizational Research: The Case of Work Commitment. *The Academy of Management Review*, (8)3, 486-500.
- Mowday, R.T. – Porter, L.W. – Steers, R.M. (1982). *Employee-organizational linkages*. New York: Academic Press
- Mueller, C. W. – Wallace, J. E. – Price, J. L. (1992). Employee commitment: resolving some issues. *Work and Occupations*, 19(3) 211-236.
- Parsons, T. (1964). *The Social Systems*. New York: Free Press
- Smith, C. A. – Organ, D. – Near, J. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology*, 68(4) 653-663.
- Thornton, R. (1970). Organizational involvement and commitment to organization and profession. *Administrative Science Quarterly*, 15(4) 417-427.
- Wasti, S. (2003). Organizational commitment, turnover intentions and the influence of cultural values. *Journal of Occupational and Organizational Psychology*, 76(3), 303-321.

SOCIO-DEMOGRAPHIC VARIABLES FORMING A PERCEPTION OF CORPORATE IMAGE BRAND IN THE CROATIAN BANKING INDUSTRY

Valentina Pirić¹

Maja Martinović²

Mirna Koričan Lajtman³

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Abstract: *The banking industry is currently at the forefront of the development of technology-based service delivery, and the survival of banks depends on their ability to deal with the environmental challenges. Due to these challenges, many banks are faced with an identity crisis and increased customer migration rates that negatively affect the levels of business profitability. Croatian market adds additionally challenge almost 30 banks currently operating with customers that are extremely price sensitive. Research shows that in the banking sector, a favorable image is considered a critical aspect of a company's ability to maintain its market position, as the image has been related to core attributes of organizational success.*

This paper studies the dimensions of corporate image, focusing on the corporate image concept in the Croatian banking industry as perceived by consumers and its possible impact on their choice of banks. The purpose of this study is to give an insight and provide a deeper understanding of how the banks, by developing a strong and consistent corporate image using corporate communication activities, ensure a long-term source of sustainable competitive advantage and influence on customers' end choice.

A study was carried out in Croatia during 2019 using 250 respondents-consumers who used different types of banking services in different banks. Series of ANOVA analysis shows how the perception of the corporate image of the bank and its influence on the customer's choice of the bank, bank loyalty and the quality of the bank services varies depending on some demographic and social variables. Results pose implications for bank communications and service positioning within customer segments. This research raises ideas for future studies as well.

Keywords: *Corporate image, Consumer choice, Corporate branding, Corporate identity, Croatian banking industry.*

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✉ vpiric@zsem.hr

¹ Zagreb School of Economics and Management, Jordanovac 110, 10000 Zagreb, Croatia

² Zagreb School of Economics and Management, Jordanovac 110, 10000 Zagreb, Croatia

³ Zagreb School of Economics and Management, Jordanovac 110, 10000 Zagreb, Croatia

1. INTRODUCTION

In a world of market turbulence and massively increasing competition, the process of creating and developing corporate image was developed into an intensive, integrated and innovative set of different marketing activities with a goal to a supportive role in the process of creating a competitive advantage for the companies. Corporate image is used to communicate with the customers, with an aspect of brand promotion and competitive advantage creation.

Therefore, the primary purpose of the marketing activities conducted by the marketers is to influence consumer perception and attitude towards a specific brand, to establish the brand image in the consumer's mind and to stimulate consumer's actual purchasing behavior of the brand, by increasing sales, maximizing the market share and developing the brand equity (Zhang, 2015). Corporate brands – versus product brands – are more likely to evoke associations of everyday products and their shared attributes or benefits, people and relationships, and programs and values (Barich and Kotler, 1991). When customers have positive aspects of a company and its corporate image, they usually form brand equity, and this leads them to have a choice from the products and services of the company (Sallam, 2016). There are several empirical studies that show the power of a corporate brand (Argenti and Druckenmiller, 2004). Today, in addition to marketing activities, promotions, and different offers and a wide range of goods and services, all the processes are focused on the attempt to attract and to motivate consumers and to increase market share (Kouchesfahani et al., 2013). This can be done by a strong brand and/or corporate image based on integrated marketing communication activities within the company. The creation of a brand implies communicating a certain brand image in such a way that all the firm's target groups link such a brand with a set of associations (Belen del Rio et al., 2001). Additionally, brand equity comes from the customer's confidence in a particular brand. The higher the trust they place in the brand, the more likely they are willing to pay for it (Lassar et al., 1995).

The same applies to the banking sector. The Croatian banking sector, after the democratic changes in the country and due to the process of globalization, according to the Croatian Banking Association (CBA), increased in 2019 to a total of 23 banks currently active and operating in the Republic of Croatia, all of them providing similar services and products to the consumers. This study tries to explain and examine how corporate image affects consumer choice in the Croatian banking industry. This is done by analyzing the impact of corporate image in the Croatian banking sector on consumer's behavioral intention on the market currently defined by the economic crisis and negative perception and reputation of the banking sector by the public. The goal of the research is to test differences in opinion depending on the socio-demographic variables.

2. EVALUATION OF CORPORATE IMAGE AND CORPORATE BRANDING

The high interest in images primarily stems from the assumption that a positive image is a necessary prerequisite for building a direct or indirect commercial relationship with various kinds of target groups (van Riel, 1995). According to Poiesz (1988), images are particularly helpful when:

1. information on the basis of which people have to make a decision is complex, conflicting and/or incomplete;
2. information is either insufficient or too wide-ranging to be able to judge;
3. people have a degree of involvement that is too low to be able to go through an extensive information-processing process;
4. certain conditions in the environment obstruct the decision-making process, such as time constraints.

However, there are significant differences between „brand“ and „corporate“ image. The term „corporate image“ is to be understood as the image of an organization. Customers now want to know about the company, not just the products (Keller, 2000). A sound corporate image creates emotional added value for a company, which ensures that a company is always one step ahead of its competitors. A sound corporate image is competitive, which means distinctive and credible (Brinkerhof, 1990). The concept of corporate image and its power has been extensively studied in the last decades by several authors (see reviews by Knecht, 1986; Dowling, 1994; Biehal and Sheinin, 1998; Argenti and Druckenmiller, 2004 and Keller and Lehmann, 2005). Corporate image is based primarily on „our total experience of the company“ (Kennedy, 1977).

Academic research has covered several topics that have advanced the understanding and importance of corporate image and its influence on corporate and brand equity and competitive advantage. Both corporate image and corporate reputation are to be understood as an equal criterion (Gray and Balmer, 1998).

However, it is vital to determine that there is a difference between corporate image and corporate identity since corporate identity could be considered as the firm's presentation. The image itself can be described as a set of meanings by which an object is known and through which people describe, remember and relate to it (Dowling, 1986). Corporate image can be described as the picture people have of a company (van Riel, 1995). Corporate communication represents a mechanism for developing and managing a set of relationships with the public or stakeholders who could affect overall performance (Kitchen and Schultz, 2001).

An increasing number of authors have perceived the importance of the corporate image. Some of them are stating that no company can afford to ignore image (Bernstein, 1986). Some are pointing that a sound corporate image provides a company with authority and forms the basis for success and continuity (Blauw, 1994). Over the last decade, firms have markedly increased their investments in the creation and development of brands (del Rio et al., 2001).

Brand image has been studied extensively due to its importance in building brand equity in an extremely competitive marketplace. Brand image could be defined as a brand that is brought to the consumer's mind by the brand association (Keller, 1993) or as consumer's thoughts and feelings about the brand (Roy & Banerjee, 2007).

Additionally, the brand image represents a key driver of brand equity, which refers to the consumer's general perception and feelings about a brand and has an influence on consumer behavior (Zhang, 2015). In addition, brand associations can be classified into three major categories (Keller, 1993; Keller, 1998): attributes, benefits, and attitudes, defining brand equity as the differential effect that brand knowledge (awareness and associations) has on the consumer response to the marketing of the brand (in terms of consumer perceptions, preferences and behavior, e.g. brand choice, comprehension of copy points from ads, reactions to a coupon promotion, or evaluations of proposed brand extension). All this becomes extremely important within a highly competitive market environment.

There is a positive relationship between corporate branding and brand equity, as well as between brand equity and the final consumer's choice (Sallam, 2016).

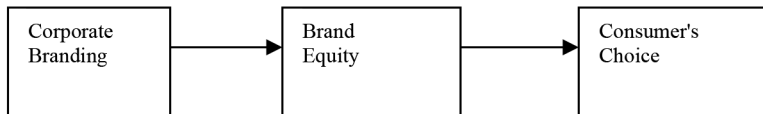


Figure 1. Conceptual relationship between corporate branding, brand equity and consumer's choice

Source: Sallam, M. A. (2016). The Impact of Brand Image and Corporate Branding on Consumer's Choice: The Role of Brand Equity, *International Journal of Marketing Studies*, Vol. 8, No. 1, pp. 98-106

The authors argue that through corporate communication, it is possible to create the valuable corporate image and, in such a way, lead the organization to a competitive edge on the market. The corporate image itself is strongly linked to the concept of corporate credibility (Keller and Aaker, 1992, 1998) as the extent to which the consumers believe that a company is willing and able to deliver products and services that satisfy the customer needs and wants.

In a world defined by intense market competition, full of turbulences with quite often unpredictable outcomes, being able to differentiate your offer - which is quite often similar to the proposal of your competitors - represents a possible source of competitive advantage. In a situation where the customers are aware of a number of brands that fit the relevant criteria, they are unlikely to expend much effort in seeking out information on unfamiliar brands (MacDonald and Sharp, 2003). Therefore, a clear and consistent corporate image can be a helpful instrument when creating brand equity and influencing the final consumer's choice. Corporate brand power comes from four things: quality, strength, price, and loyalty (Kitchen and Schultz, 2001). Thus, a corporate brand can be seen as the central meaning that provides the basis for identity programs, strategy, and competitive thrust. In order to achieve this, corporate communication needs to be integrated on all levels in the company, having in mind that the driving force of marketing and branding products, services, and corporations is the Marketplace (Schultz and Kitchen, 2000).

Recently, the concept of customer value has drawn increased attention (Reichheld, 1993; Slater, 1997). In connection to that, it has been pointed out that within slow market growth and intense competition, today's marketplace continues burdening firms in deriving new, as well as repeat purchases (Oh, 2000). Having in mind the possibility to avoid only competitive price advantages, the concept of the corporate image became even more valuable for the companies.

On a customer level, the value of a brand itself – and thus its equity – is ultimately derived from the words and actions of the consumers (Villas-Boas, 2004). Consumers decide with their purchases - based on whatever factors they deem necessary - which brands have more equity than others. It has been proposed that customer-level brand equity can mostly be captured by five aspects that form a hierarchy of chain, which are bottom (lowest level) to top (highest level), as follows (Keller and Lehmann, 2005):

1. Awareness (ranging from recognition to recall);
2. Associations (encompassing tangible and intangible product or service considerations);
3. Attitude (ranging from acceptability to attraction);
4. Attachment (ranging from loyalty to addiction);
5. Activity (including purchase and consumption frequency and involvement with the marketing program, other customers through word-of-mouth etc., or the company).

Additionally, brand equity itself represents additional value given to goods and services (Hoeffler and Keller, 2003) or add value to the company and consumer (Farquar, 1990). Therefore, some authors claim that brand image can be considered a constituent element of brand equity (Bivainiene and Šliburyte, 2008). Following the same logic, the same is valid for the corporate image, which reflects associations about the brand in the consciousness of the user (Keller, 1998) and associates how the brand is perceived by the user (Aaker, 2003). Moreover, when the brand image is consistent with the consumer's self-concept, the consumers would give preference to it (Matrineau, 1957).

3. DISTINCTION AND DIFFERENTIATION BETWEEN CORPORATE IMAGE AND CORPORATE IDENTITY

The corporate image includes corporate identity. However, it is possible to argue that corporate image represents a broad concept that consists of both corporate identity and corporate reputation as a sub-criterion of the whole image of the corporation (Khvtisiashvili, 2012). Corporate identity can be considered as a company's entire presentation in the eyes of different stakeholders. It has been underlined that corporate identity represents the total of visual and non-visual means applied by a company to present itself to all its relevant target groups (Blauw, 1994). Some authors describe corporate identity as the logo or brand image of a company, and all other visual manifestations of the identity of a company (Carter, 1982). Any action or expression of a company can be classified under one of the following headings: behavior, communication, and symbolism (van Riel, 1995). An image can be strengthened, reinforced, or altered positively by organizational efforts to create and manage the corporate identity (Kitchen and Schultz, 2001). Thus, authors argue that images are the internal criteria that people have of an organization, while character represents a planned or managed effort by an organization to communicate with its target groups (employees, consumers, suppliers, distributors, journalists, etc.; Kitchen and Schultz, 2001).

A model of corporate identity in relation to the corporate image has been developed (Birkigt and Stadler, 1986):

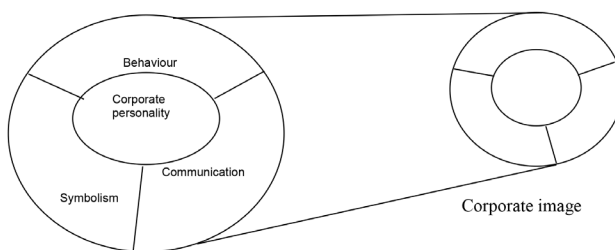


Figure 2. Corporate identity with regard to corporate image
Source: Birkigt, K, Stadler, M.M. (1986), pp. 28

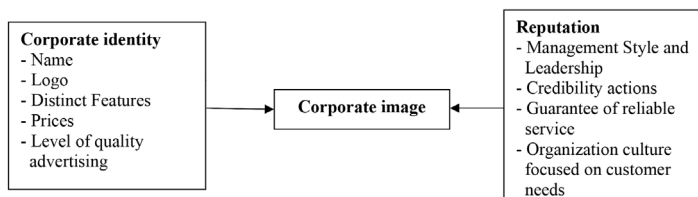


Figure 3. Corporate image in relation to corporate identity and reputation

Source: Adopted from Khvtisiashvili, I. (2012), How Does Corporate Image Affect the Competitive Advantage of Georgian Banking Segment, *Journal of Business*, Vol. 1(1), pp. 35-43

It is clear that the company's image represents a reflection of an organization's identity. If the images of your company align with the organization's reality, your reputation management program is a success (Argenti and Forman, 2002). A strong reputation also has important strategic consequences for a firm, as it calls attention to a company's attractive features and widens the options available to its managers (Fombrun, 1996).

As a result, the intangible entity of reputation is undoubtedly a source of competitive advantage. Some authors argue that through corporate communication, it is possible to create the valuable corporate image and in such a way lead the organization to the competitive advantage on the market needed to overcome competitive pressure and a growing number of requirements for the profitable operation of the organization (Gray and Balmer, 1998).

How can identity and image contribute to the organization's reputation and success in communicating to both external and internal constituencies, and what they are, is shown in Figure 4.

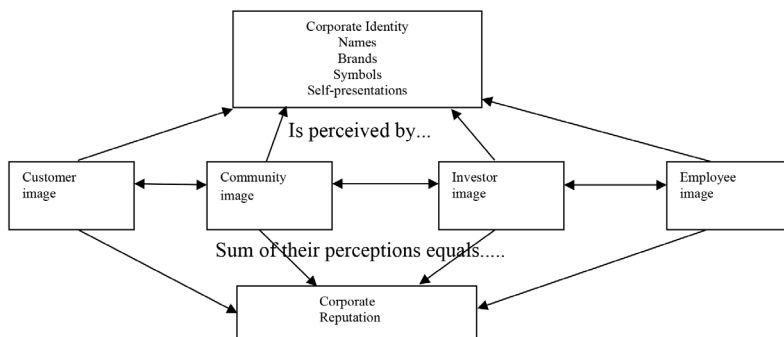


Figure 4. What are identity, image, and reputation?

Source: Argenti, P.A., Forman, J. (2002), pp. 69

4. IMPACT OF CORPORATE IMAGE ON CONSUMER'S BEHAVIORAL INTENTION

Looking through extant researches, the most widely used predictors of consumer's behavioral intention are customer satisfaction and customer loyalty (Zhang, 2015). Customer's performance-specific expectation and expectation disconfirmation represent critical indicators of customer satisfaction (Oliver, 1980). Additionally, companies could infer the potential influence on the brand image on customer satisfaction by identifying the perceptual difference toward a brand between the existing customers and non-users of the brand (Bird, Channon and Ehrenberg, 1970). Brand image has a significant impact on customer satisfaction, especially across the E-banking, landline, mobile phone, as well as bank and supermarket industries (Gronholdt, Martensen and Kristensen, 2000). A comprehensive definition of customer loyalty states: customer loyalty is the "biased (i.e. non-random) behavioral response (i.e. revisit), expressed over time, by some decision-making unit with respect to one bank out of a set of banks, which is a function of psychological (decision-making and evaluative) process resulting in brand commitment" (Bloemer et al., 1998). Since the brand image is perceived as an important, strong and influential driving force of customer loyalty (Zhang, 2015), it is clear why the companies within actual market conditions need to pay additional attention to the long-term development of a strong corporate image, creating adequate competitive advantage, ensuring requested market share and planned sales outcome, as well as profitability. All this is possible to be additionally emphasized with integrated marketing communication activities.

5. CORPORATE IMAGE IN THE CROATIAN BANKING INDUSTRY

The banking sector, as one of the cornerstone industries, plays a significant role in all the countries' future development (Balenau et al., 2011). The same applies to Croatia. The banking system of Croatia is, as stated by the Croatian Economy and Banking sector (2019), characterized by relatively high concentration and competition between the major banks, making it difficult for the other banks to compete. Another specific feature of the Croatian banking system is a prominent share of foreign capital (mainly from Austria and Italy). According to the data published on the official website of the Croatian National Bank (<http://www.hnb.hr>), the most important financial intermediaries in the Republic of Croatia are credit institutions, which accounted for around 73% of the financial sector assets at the end of 2014. Banks are the most important credit institutions (accounting for 71.5% of the financial sector assets at the end of 2014) and the most active of all financial institutions in the country, both in terms of the payment system and their presence on all the three financial markets: the money market, the FX market and the capital markets, where they represent the most important source of finance to the economy. In addition to the banks, credit institutions of the Republic of Croatia also comprise housing savings banks and savings banks. Housing savings banks encourage national savings and help meeting housing needs by collecting annuity-type savings from natural persons, with the primary goal to lend the accumulated funds back to them in the form of affordable housing loans, after an accumulation period of a predetermined length. Savings banks (and credit unions) are the result of the transformation of savings and loan cooperatives, and their operations are regulated and supervised by the CNB.

The fact is that the banking services have been dynamic during the last decade due to the advent of the internet marketing of the banking sector (Jahanbakhshian, 2013). Additionally, the banking industry is currently in the forefront of the development of technology-based service delivery. Generally, in today's competitive environment, an approach to become more professional in order to develop business is essential, and the survival of banks depends on their ability to deal with the environmental challenges (Nokandeh et al., 2013). Some authors argue that in the banking sector, bank service quality is a more important attribute to the corporate image than other variables (Richardson and Robinson, 2007). The problem is that many banks are faced with an identity crisis and increased customer migration rates that negatively affect the level of business profitability (Filip and Tatu, 2012). This applies to Croatia, as well. Several authors are pointing out that in the banking sector a favorable image is considered a critical aspect of a company's ability to maintain its market position, as image has been related to core attributes of organizational success, especially to customer patronage (Korgaonkar et al., 1985; Moise et al., 2012). The same is valid for the highly competitive Croatian banking market, with almost 23 banks currently operating and where customers are extremely price sensitive. Due to this, the majority of the offers are based on pure price competition, which seriously puts business profitability in focus.

6. OBJECTIVES OF THE STUDY

The paper seeks to examine the possible influence of corporate image in the banking sector in the Croatian market on consumer's choice, considering the banks' image as an indicator of customer-oriented business philosophy and a potential source of competitiveness on an extremely competitive banking market, with similar banking offers in terms of total quality, product substance, and service level. Objectives of this study are as follows:

1. To explore opinions and agreeing with statements that corporate image has influence on customer's choice in Croatia, customer loyalty and perception of the quality;
2. To understand which socio-demographic variables impact the perception of corporate image has on opinions and behavior of the clients;

3. To understand who might be more prone to agree that good corporate image might cause willingness for customers to pay products at higher prices.

7. RESEARCH METHODOLOGY

Based on previous research of corporate image in banking industry, conducted by numerous authors (e.g. Osei et.al., 2014, Bravo, Montaner and Pina, 2012; Bravo, Montaner and Pina, 2010 and Bravo, Montaner and Pina, 2009), following hypotheses were formulated with the focus on Croatian banking industry:

- H1:** Survey participants will agree that corporate image of the bank influences costumer perception of the bank, bank's product and services, loyalty, selection of the bank and willingness to accept products at higher prices.
- H2:** Opinions on the impact of the corporate image on costumer perception of the bank, bank's product and services, loyalty, selection of the bank and willingness to accept products at higher prices will defer depending on gender, age and income level.
- H3:** Opinions on the brand equity, formed as a construct of several items, can be predicted by socio-demographic variables.

The study was carried out in Zagreb, the Croatian capital, during June 2019. Primary data was collected from customers who are using products and services of different banks currently operating in the Republic of Croatia by using the survey method and convenient sampling method. To test the impact of corporate image on the consumer's choice in the Croatian Banking industry, a structured questionnaire with two sections was designed. The survey has been developed based on previous researches (Osei et.al., 2014, Bravo, Montaner and Pina, 2012; Bravo, Montaner and Pina, 2010 and Bravo, Montaner and Pina, 2009). The first section of the questionnaire captured demographic information for describing a sample. The second section of the questionnaire was designed to measure if the corporate image of the bank has a strong influence on the customer's choice of the bank, on customer's loyalty to the bank, and on customer's perception of the bank in Croatia.

Additionally, the second section of the questionnaire was designed to measure if the corporate image of the bank has a strong influence on the customer's perception of the quality of the banking products and services. It was also measured if the customers are willing to accept the banking product at a higher price, if the corporate image of the bank is solid. The sample size consisted of respondents of various banks currently active in Croatia, including foreign, private and public banks. The survey questionnaires were distributed to 280 respondents in Zagreb, all of them are users of different banking products and services. In total, 250 usable questionnaires were collected, resulting in an 89.28 % response rate. The results from the questionnaire providing demographic information describing a sample are presented in Table 1.

Table 1. Demographic data

Gender	Frequency	Percent
Male	115	46,00
Female	135	54,00
Age		
21-30	29	11,60
31-40	122	48,80
41-50	69	27,60

51-60	13	5,20
61-70	17	6,80
Social class		
Lower class	0	0,00
Working class	26	10,40
Middle class	182	72,80
Upper middle class	42	16,80
Marital status		
Married	140	56,00
Single	110	44,00
Level of education		
Secondary school	17	6,8
Higher secondary school	28	11,2
Graduate	187	74,8
Post graduate	18	7,2
Status		
Student	12	4,80
Unemployed	0	0,00
Employed	230	92,00
Retired	8	3,20
Income in HRK/EUR		
Less than 5.000 / 673,03	20	8,00
5.001-7.000 / 673.04 - 942,25	143	57,20
7.001 - 9.000 / 942,38 - 1.211,46	41	16,40
9.001 - 11.000 / 1.211,60 - 1.480,68	31	12,40
11.001 - 13.000 / 1.489,81 - 1.749,89	9	3,60
13.0001 and more/ 1.750,03	6	2,40
Total	250	100,00

Note: Middle exchange rate for EUR, <https://www.zaba.hr>, accessed 04.09.2019

Source: Research results

8. RESEARCH FINDINGS

To test the first hypothesis, several statements have been tasted on the 5-point Likert-type scale to measure the opinion about the impact of corporate image on customer's perception, opinion and behavior. Results show that respondents highly agree that corporate image plays a significant role in customer's perception, opinion, and behavior towards the bank and products (Table 2).

Table 2. Descriptive statistics

	Mean	St. Deviation
Corporate image of the bank has a strong influence on the customer's choice of the bank.	4.9	0.3
Corporate image of the bank has a strong influence on customer's loyalty to the bank.	4.8	0.4
Corporate image of the bank has a strong influence on the customer's perception of the bank.	4.8	0.5

Corporate image of the bank has a strong influence on the customer's perception of the quality of the banking products.	4.9	0.3
Corporate image of the bank has a strong influence on the customer's perception of the quality of the banking services.	4.9	0.3
If the corporate image of the bank is solid, the customers are willing to accept the product at a higher price.	4.6	0.6

Respondents highly agree that corporate image of the bank has a substantial impact on customer's perception of the quality of banking products ($X=4.9$, $Sd=0,3$) and banking services ($X=4.9$, $Sd=0,3$) and customer's choice of the bank ($X=4.9$, $Sd=0,3$). The lowest score is obtained for the statement that a solid corporate image will cause the willingness to buy products at higher prices ($X=4.6$, $Sd=0,6$). Taking into account the high score, we can conclude that the first hypothesis tested is accepted.

In order to test the second hypothesis, a series of one-way ANOVA's were conducted. Gender showed as a significant socio-demographic variable in explaining participant's opinion on the impact of corporate image on customer's perception, opinion and behavior (Table 3).

Table 3. Descriptive statistics and ANOVA results for gender

		Mean	F	sig
Corporate image of the bank has a strong influence on the customer's choice of the bank.	Male	4.83	7.393	$p<0.01$
	Female	4.94		
Corporate image of the bank has a strong influence on customer's loyalty to the bank.	Male	4.69	18.105	$p<0.001$
	Female	4.90		
Corporate image of the bank has a strong influence on the customer's perception of the bank.	Male	4.85	4.925	$p<0.05$
	Female	4.71		
Corporate image of the bank has a strong influence on the customer's perception of the quality of the banking products.	Male	4.78	37.200	$p<0.001$
	Female	5.00		
Corporate image of the bank has a strong influence on the customer's perception of the quality of the banking services.	Male	4.88	0.006	$p>0.05$
	Female	4.88		
If the corporate image of the bank is solid, the customers are willing to accept the product at a higher price.	Male	4.64	0.012	$p>0.05$
	Female	4.65		

The results of the research show that men tend to agree more than women that the corporate image of the bank has a strong influence on the perception of the bank ($F=4,925$, $p<0,05$). But more detailed statements analyzing not only the perception but asking about opinions and loyalty show a different picture. Women statistically agree more with statements that corporate image affects perception of the quality of banking products ($F=37.200$, $p<0,001$), loyalty towards the bank ($F=18.105$, $p<0,001$) and customers bank selection ($F=7.393$, $p<0,01$). For the other two statements, the results of the one-way ANOVA tests are not statistically significant. These results have potential practical implications in the banking sector. Namely, women could be much better affected by marketing activities compared to men.

Next to gender, the analysis was performed for age as a factor. Results showed that for two statements, age played a significant factor. Participants with different age groups had statistically different opinions on the statement that corporate image plays a role in customer's choice of the bank (Table 3). Agreeing with this statement grows significantly with age. Similar results are showed on the item measuring how much participants agreed that corporate image impacted customer's perception of the quality of banking services.

Table 3. Descriptive statistics and ANOVA results for age

	Age	Mean	F	sig
Corporate image of the bank has a strong influence on the customer's choice of the bank.	21-30	4.75	3.779	p<0,05
	31-40	4.84		
	41-50	4.83		
	51-60	4.92		
	61-70	5.00		
Corporate image of the bank has a strong influence on customer's loyalty to the bank.	21-30	4.89	1.226	p>0,05
	31-40	4.82		
	41-50	4.75		
	51-60	4.85		
	61-70	4.67		
Corporate image of the bank has a strong influence on the customer's perception of the bank.	21-30	4.82	0.394	p>0,05
	31-40	4.75		
	41-50	4.81		
	51-60	4.69		
	61-70	4.83		
Corporate image of the bank has a strong influence on the customer's perception of the quality of the banking products.	21-30	4.89	0.966	p>0,05
	31-40	4.87		
	41-50	4.96		
	51-60	4.92		
	61-70	4.89		
Corporate image of the bank has a strong influence on the customer's perception of the quality of the banking services.	21-30	4.75	3.688	p<0,05
	31-40	4.86		
	41-50	4.99		
	51-60	4.92		
	61-70	4.88		
If the corporate image of the bank is solid, the customers are willing to accept the product at a higher price.	21-30	4.79	0.775	p>0,05
	31-40	4.60		
	41-50	4.68		
	51-60	4.54		
	61-70	4.72		

The lowest results on this statement have a group of participants aged between 21 and 30 years ($X=4.75$) compared to the opinion of the group aged between 41 and 50 years ($X=4.99$).

To test the second hypothesis, several ANOVA's were performed using income as the factor variable. According to our results, participants with different household incomes judge differently on the power of corporate image on perception, opinions, and decisions people make (Table 4). The highest difference is scored on the statement that the corporate image has a strong impact on the customer's perception of the quality of the banking products ($F=7.921$, $p<0.001$). Interestingly, respondents with higher income less agreed that corporate image affects perception compared to respondents that have lower income. As the results are inconsistent with other items tested, more research needs to be done in order to clarify the mechanisms affecting opinions when it comes to income.

Table 4. Descriptive statistics and ANOVA results for income

		Mean	F	sig
Corporate image of the bank has a strong influence on the customer's choice of the bank.	to 5000	4.90	3.999	p<0.05
	5001-7000	4.94		
	7001-9000	4.80		
	9001-11000	4.74		
	11001 and more	5.00		
Corporate image of the bank has a strong influence on customer's loyalty to the bank.	to 5000	4.90	1.033	p>0.05
	5001-7000	4.94		
	7001-9000	4.80		
	9001-11000	4.74		
	11001 and more	4.91		
Corporate image of the bank has a strong influence on the customer's perception of the bank.	to 5000	4.75	2.078	p>0.05
	5001-7000	4.73		
	7001-9000	4.93		
	9001-11000	4.74		
	11001 and more	4.92		
Corporate image of the bank has a strong influence on the customer's perception of the quality of banking products.	to 5000	4.95	7.921	p<0.001
	5001-7000	4.95		
	7001-9000	4.93		
	9001-11000	4.74		
	11001 and more	4.58		
Corporate image of the bank has a strong influence on the customer's perception of the quality of the banking services.	to 5000	4.70	2.323	p<0.05
	5001-7000	4.90		
	7001-9000	4.85		
	9001-11000	4.87		
	11001 and more	5.00		
If the corporate image of the bank is solid, the customers are willing to accept the product at a higher price.	to 5000	4.65	2.397	p<0.05
	5001-7000	4.63		
	7001-9000	4.71		
	9001-11000	4.84		
	11001 and more	4.31		

In the third hypothesis, we wanted to test if socio-demographic variables can predict the brand equity – construct variable made from statements in the research. To test the possibility that this variable is plausible to construct factor analysis was conducted, including variables stating the corporate image of the bank influences loyalty, quality of the products, and quality of the services. Exploratory factor analysis uncovered one factor explaining 45% of the variance, whereas the reliability test showed borderline results ($\alpha=0.678$). Both the validity and reliability of the scale were considered to be satisfying, so the regression analysis was performed (Table 5).

Out of 7 variables, only gender ($\beta=0.397$, $p<0.001$) showed as a significant predictor on the opinion of respondents to brand equity. This predictor explains 15% of the variable results. In order to understand the role of socio-economic variables on brand equity, more research should be conducted containing more specific variables measuring brand equity and analyzing predictive power withing different cohorts of the population.

Table 5. Factor predicting brand equity

	R	R Square	F	Sig.	Beta	t	Sig.
Gender					0.397	5.688	p<0.001
Age					0.014	0.215	p>0.05
Social status					0.083	1.368	p>0.05
Marital status	0.389	0.152	6.181	p<0.001	-0.073	-1.105	p>0.05
Level of education					0.039	0.646	p>0.05
Status (employment)					-0.080	-1.235	p>0.05
Income in HRK/EUR					-0.004	-0.060	p>0.05

9. CONCLUSION AND MANAGERIAL IMPLICATIONS

This study analyzed the opinion of participants about the impact of corporate image on the consumer's choice of the bank, on the customer's loyalty to the bank, as well as on the customer's perception of the bank. Additionally, it analyzed the influence of the corporate image of the bank on the customer's perception of the quality of the banking products and services and willingness of the customers to accept the banking product at a higher price, if the corporate image of the bank is solid.

Corporate image and its management have become an important management priority for all types of organizations, including the banking industry. The paper has implications for both academics and practitioners. The findings provide an understanding of the Croatian consumers' behavior in relation to a possible impact and effects of corporate image on their choice in the banking domain. The corporate identity was identified as a powerful criterion affecting the corporate image. Despite the change of consumer lifestyle, brand, and corporate image, developed as a result of strong corporate communication activities, remain the dominant impact factors of consumption decisions. Consumers make their purchase decisions largely depending on the corporate and brand image, rather than the product or service itself. This study contributes to a better understanding of the influence of corporate image on the consumer's decisions in the Croatian banking industry. It shows that gender, age, and income play a role in customers' perception and gender if as significant predictor of the perception of brand equity.

Furthermore, the results have shown an evident and direct link between corporate image and the customer's choice about the perception of the quality of the banking products and banking services. Nevertheless, the study contributes to a better understanding of the customer's decisions connected with pricing, since it is shown that the customers are ready to accept higher prices of the products and services if the perceived corporate image of the bank is solid.

And last but not least, the research also clearly shows a direct link between the corporate image in the banking sector and the customers' perception of the bank, as well as customer loyalty to the bank. It is highly advisable, as shown in the study, that the concept of the corporate image represents an important factor in the banking industry, having a strong influence on the consumer's choice and within a competitive market environment, helping the banking industry to avoid pure price competition and to remain profitable.

It can be argued, based on the study conducted, that corporate image and brand equity have a strong influence on the final consumer's choice. In addition, the banks in Croatia should pay much more attention to corporate branding in order to build brand equity, which will lead to positive

consumer's choice. That is why an additional focus should be paid to corporate communication management as a source of corporate image development.

The conducted research and study will hopefully stimulate further progress in these areas of research, providing additional support for the marketing and sales managers operating in the Croatian banking industry. However, this study has its limitations; for instance, a sample size of only 250 consumers, meaning that the results cannot be generalized for all Croatian banking customers.

Additionally, the study was conducted in Croatia, and this means that the individual results cannot be generalized for all European banking customers since Croatia belongs to the developing countries within the European Union. Additionally, the research is limited to the banking sector only, not taking into account any other industries. In the future, the research methodology could be adapted to other areas of business interest. Hence, it is important to underline that corporate image has a direct impact on the competitive advantage on the Croatian banking sector; however, it is not utilized to its maximum possibilities. The banks operating in Croatia need to focus much more on integrated marketing communication in order to build and develop an efficient corporate image as a source of long-term sustainable competitive advantage, customer loyalty, and profitability.


REFERENCES

- Aaker, D.A. (2003). *Brand Portfolio Strategy: Creating Relevance, Differentiation, Energy, Leverage, and Clarity*. The Free Press, New York, NY.
- Argenti P.I.A., Druckemiller, B. (2004). Reputation and the corporate brand. *Corp. Reputation Review*, 6(4), pp. 368-374
- Argenti, P.A., Forman, J. (2002). *The Power of Corporate Communication*, McGraw-Hill, New York
- Barich H., Kotler, P. (1991). A Framework for image management, *Sloan Management Review*, Winter, pp. 94-104
- Bernstein, D. (1986). *Company Image and Reality: A Critique of Corporate Communications*, Holt, Rinehart & Winston, Eastbourne.
- Bird, M., Channon, C., Ehrenberg, A.S.C. (1970). Brand Image and Brand Usage, *Journal of Marketing Research*, 7, pp. 307-314
- Birkigt, K., Stadler, M.M. (1986). *Corporate Identity, Grundlagen, Funktionen und Beispielen*, Verlag, Moderne Industrie: Landsberg an Lech.
- Bivainiene, L., Šliburyte, L., (2008). The Brand Image As An Element Of Brand Equity. *Social Research*, Nr. 2(12), pp. 22-31
- Belen del Rio, A., Vazquez, R., Iglesias, V. (2001). The effects of brand associations on consumer response, *Journal of Consumer Marketing*, Vol. 18, Bo. 5, pp. 410-425
- Biehal, G.J., Sheinin, D.A. (1998). Managing the brand in the corporate advertising environment: decision-making framework for brand managers, *J. Advertising*, 27(2), pp. 99-110
- Blauw, E. (1994). *Het Corporate Image, vierde geheel herziene druk*, De Viergang: Amsterdam. (4th rev. Edn. First published 1986)
- Bloemer, J., de Ruyter, K., Peeters, P. (1998). Investigating drivers of bank loyalty: the complex relationship between image, service quality and satisfaction, *International Journal of Bank Marketing*, 16(7), pp. 276-286
- Bravo, R., Montaner, T., Pina, J.M. (2010). Corporate brand image in retail banking: Development and validation of a scale, *The Service Industries Journal*, pp. 1199-1218
- Bravo, R., Montaner, T., Pina, J.M. (2009). The role of bank image for customers versus non-customers, *International Journal of Bank Marketing*, Vol. 27, Issue:4, pp. 315-334

- Bravo, R., Montaner, T., Pina, J.M. (2012). Corporate brand image of financial institutions: a consumer approach, *Journal of Product and Brand Management*, Vol. 21, Issue: 4, pp. 232-245.
- Brinkerhof, J.D.F. (1990). Corporate image als concurrentiewapen, *Holland Harvard Review*, Vo. 22, pp. 46-54
- Carter, D.E. (1982). *Designing Corporate Identity Programs for Small Corporations*, Art Direction Company, New York
- Croatian Banking Association. (2019), <http://www.hub.hr/hr/popis-svih-banaka-koje-djeluju-u-republici-hrvatskoj>
- Croatian Economy and Banking Sector. (2017), <https://thebanks.eu/countries/Croatia>
- Croatian National Bank. (2017). <https://www.hnb.hr>
- Del Rio, B., Vazquez, R., Iglesias, V. (2001). The effects of brand associations on consumer response. *Journal of Consumer Marketing*, Vol. 18, No. 5, pp. 410-425
- Dowling, G.R. (1986). Managing Your Corporate Image, *Industrial Marketing Management*, 15(2): pp. 109-115
- Dowling, G.R. (1994). *Corporate Reputations*, Kogan-Page, London
- Farquar, P.H. (1990). Managing Brand Equity, *Journal of Advertising Research*, No. 6, pp. RC7-RC12
- Filip, A., Tatu, Ch.I. (2012). Corporate image in Romanian retail banking market, *The Romanian Economic Journal*, Year XV, No. 46 bis, pp. 63-78
- Fombrun, Ch. (1996). *Reputation: Realizing Value from the Corporate Image*. Boston: Harvard Business School, pp. 5
- Gray, E., Balmer, J.M.T. (1998). Managing corporate image and corporate reputation. *Long Range Planning*, Vol. 31, No. 5, pp. 695-702
- Gronholdt, L., Martensen, A., Kristensen, K. (2000). The Relationship between Customer Satisfaction and Loyalty: Cross-Industry Differences, *Total Quality Management*, 11, pp. 509-514
- Hoeffler, S. Keller, K.L. (2003). The marketing advantages of strong brands. *Journal of Brand Management*, August, Vol. 10, No. 6, pp. 421-445
- Jahanbakhshian, P. (2013). Internet Marketing: Path-to-Profitability in the Banking Industry, *International Journal of Research in Management*, Issue 3, Vol. 2 (March), pp. 120-132
- Keller, K.L. (1998). *Strategic Brand Management*. Prentice-Hall. Englewood Cliffs, NY.
- Keller, K.L. (1993). Conceptualizing, measuring and managing customer based brand equity. *Journal of Marketing*, 57, pp. 1-22
- Keller, K.L. (2000). Building and Managing Corporate Brand Equity, in Schultz, M., Hatch, M.J and Larsen, M.H, *The Expressive Organization*, Oxford: Oxford University Press, pp. 118
- Keller, K.L., Aaker, D.A., (1992). The effects of sequential introduction of brand extensions, *Journal of Marketing Research*, 29(May), pp. 35-50
- Keller, K.L., Aaker, D.A. (1998). Corporate-level marketing: The impact of credibility on a company's brand extensions, *Corporate Reputation Review*, 1(August), pp. 356-378
- Keller, K.L., Lehmann, D.R., (2005). Brands and branding: Research findings and future priorities, Tuck School of Business, Hanover
- Kennedy, S.H. (1977). Nurturing corporate images: Total communication or ego trip?, *European Journal of Marketing*, 11(1), pp. 120-64
- Khvtisiashvili, I. (2012). How Does Corporate Image Affects the Competitive Advantage of Georgian Banking Segment? *Journal of Business*, 1(1), pp. 35-44
- Kitchen, Ph.J., Schultz, D.E. (2001). *Raising the Corporate Umbrella: Corporate Communications in 21st century*. Palgrave, New York
- Knecht, J., (1986). *Zin en onzin over images en reclame*, Toespraak tijdens corporate image/identity symposium, georganiseerd door ESPRIT/MOTIVACTION; Amsterdam

- Kouchesfahani, M.M., Sajedi, A., Abdoolahzade, M., Sheikhhossini, A. (2013). The Importance of Marketing in the Bank, *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 5, No. 1, pp. 1082-1088
- Korgaonkar, P.K., Lund, D., Prince, B. (1985). A structural equations approach toward examination of store attitude and store patronage behavior, *Journal of Retailing*, Summer, 61, pp. 39-60
- Lassar, W., Mittal, B., Sharma, A. (1995) Measuring Customer-Based Brand Equity, *Journal of Consumer Marketing*, Vol. 12, pp. 11-19
- MacDonad, E., Sharp, B. (2003). Management Perceptions of the Importance of Brand Awareness as an Indication of Advertising Effectiveness. *Marketing Bulletin*, Vol. 14, Article 2, pp. 1-11
- Martineau, P. (1957). Motivation in Advertising, *Journal of Marketing Research*, February, pp. 35-40
- Moise, D., Gregorescu, B., Zguta, D. (2012). The Use of Event Marketing Management Strategies, *Procedia – Social and Behavioral Sciences*, Volume 46, pp. 5409-5413
- Nokandeh, B.F., Poorhabib, A., Seyedi, S. H, Niknafs, M. (2013). Marketing Research Services of Banks and their Impact on Perception of Service Users, *Interdisciplinary Journal of Contemporary Research in Business*, Vol. 4, No. 12, pp. 472-477
- Oh, H. (2000). The Effect of Brand Class, Brand Awareness, and Price on Customer Value and Behavioral Intentions. *Journal of Hospitality & Tourism Research*, Vol. 24, No. 2, May, pp. 136-162
- Oliver, R.L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions, *Journal of Marketing*, 17, pp. 460-469
- Osei, N.Y.A. et.al. (2014). Corporate image of the Ghanaian banking industry: do the perceptions of employees differ from customers? *African Journal of Hospitality, Tourism and Leisure*, Vol. 3(2), pp. 1-23
- Poiesz, T.B.C. (1988). The image concept: It's place in consumer psychology and its potential for other psychological areas, paper presented at the 14th International Congress of Psychology, Sydney, Australia
- Reichheld, F.F. (1993). Loyalty-based management. *Harvard Business Review*, March-April, pp. 64-73
- Richardson, B.A., Robinson, C.G. (2007). The impact of internal marketing on customer service in retail bank, *International Journal of Bank Marketing*, Vol. 4, No. 5, pp. 3-30.
- Roy, D., Banerjee, S. (2007). Caring strategy for integration of brand identity with brand image. *International Journal of Commerce and Management*, 17(1/2), pp. 140-148
- Sallam, M. A. (2016). The Impact of Brand Image and Corporate Branding on Consumer's Choice: The Role of Brand Equity, *International Journal of Marketing Studies*, Vol. 8, No. 1, pp. 98-106
- Schultz, D.E., Kitchen, P.J. (2000). *Communicating Globally: An Integrated Marketing Approach*, Chicago, NTC Business Books, and London, Macmillan – now Palgrave.
- Slater, S.F. (1997). Developing customer value-based theory of the firm. *Journal of the Academy of Marketing Science*, 25(2), pp. 162-167
- van Riel, C.B.M. (1995). *Principles of Corporate Communication*. Prentice Hall, Harlow, England, pp. 74
- Villas-Boas, J.M., (2004). Consumer learning, brand loyalty, and competition, *Marketing Sci.*, 23(1), pp. 134-145
- Zhang, Y. (2015). The Impact of Brand Image on Consumer Behavior: A Literature Review, *Open Journal of Business and Management*, 3, pp. 58-62

THE INFLUENCE OF BOARD INDEPENDENCE AND INTERNAL AUDIT FUNCTION ON COMPANY'S PERFORMANCE, STUDY OF MACEDONIAN COMPANIES

Elena Bundaleska¹ 
Aleksandra Kocheska²
Vladimir Naumovski³

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Abstract: *Corporate governance and company performance are issues that continue to raise interests of the researchers worldwide, as they provide valuable lessons for vast audience, such as company owners, company leaders, supervisors and policy makers. This study aims towards contributing to the previous literature showing that there is positive correlation between corporate governance mechanisms and company performance. It specifically focuses on the correlation between board independence and internal audit function existence with performance of the companies listed on the Macedonian Stock Exchange, for specific periods 2003-2004 vs. 2014-2018. In particular, the influence of the board independence and the internal audit function over company performance are investigated through Profit, Return on Equity (ROE) and Earnings per Share (EPS) indicators. The results of the performed research and analysis suggest that corporate governance is important for the company performance, i.e. corporate governance improvements such as board member independence and internal audit function have positive impact on the performance of the companies listed on the Macedonian Stock Exchange. However, given the fact that, other factors apart from board member independence and internal audit function can influence the Profit, ROE and EPS of companies, it is reasonable to assume that the increase of profit and of ROE and EPS indicators may not be connected exclusively with having independent board members and internal audit function. First and foremost, this study is of interest for company owners and leaders; yet, it also provides useful information for supervisors and other policy makers.*

Keywords: *Corporate governance, Company performance, Independent board members, Internal audit function, Listed companies.*

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✉ bundaleska@uacs.edu.mk

¹ University American College Skopje, Treta Makedonska Brigada No. 60, 1000 Skopje, North Macedonia

² University American College Skopje, Treta Makedonska Brigada No. 60, 1000 Skopje, North Macedonia

³ Commission for Protection of Competition, Kiril and Methodij No. 54 (6th floor), 1000 Skopje, North Macedonia

1. INTRODUCTION

Corporate governance is a never ending process that continuously evolves. It is not a final destination at which a company can arrive and stay for an extended period of time. Since it includes “procedures and processes according to which an organization is directed and controlled” (European Central Bank, 2004), these procedures and processes need to be updated and enhanced continuously, in order to give best possible results. In the past 20 years, many of the high-profile corporate collapses (such as Enron Corp. in 2001, WorldCom Inc. in 2002, Lehman Brothers in 2007/8, British Petroleum in 2010, Volkswagen AG in 2015, Toshiba in 2015, etc.) were linked to non-existent, or inefficient and/or ineffective corporate governance systems. According to many studies, the implementation and compliance with sound corporate governance practices improves and leads to company’s better performance (Apostolov, 2011; Velnampy, 2013; Christensen, Kent, Routledge & Stewart, 2015).

Building upon these studies, this paper shall further investigate whether the independence of the board members and existence of internal audit function have influence on the performance of the Macedonian companies. It shall assess the performance of the Macedonian companies listed on the Macedonian Stock Exchange (super listing and regular listing), for the years 2003 and 2004, as period prior to the adoption of the current Company Law of 2004⁴ and the years 2014, 2015, 2016, 2017 and 2018, as a post adoption of the Law period. It shall accordingly make conclusions based on the results of the conducted research.

2. LITERATURE REVIEW

The research related to corporate governance and its effects on company performance has increased significantly throughout the years. This chapter reviews literature highlighting corporate governance developments, especially in the area of the relationship between board independence, internal audit and company performance.

2.1. Review of definitions for corporate governance

There are usually different views of the nature and the essence of corporate governance, which is mostly due to the variety of different approaches taken by different scholars and practitioners, and the complexity of the issue. The most widely used definition of corporate governance is that corporate governance is “a system by which companies are directed and controlled” (Cadbury, 1992, p. 15). More specifically it is the framework by which various stakeholder interests are balanced. It requires a “**set of relationships** between company’s management, its board, its shareholders and other stakeholders”, contributing towards a “**structure** through which the objectives of a company are set, and the means of attaining those objectives and monitoring performance are determined” (OECD, 2004).

2.2. Corporate Governance and Company Performance

Different studies have investigated the benefits of sound corporate governance practices on company performance. Ho (2005, p. 1) states that “corporate governance attributes are inter-related”, therefore assessment of corporate governance based on one attribute may not explain the overall corporate governance effect on company performance. In addition, Bauer, Frijns, Otten & Tourani-Rad (2008) find that “not all categories affect corporate performance”, thus improvement

⁴ Including the changes of the Company Law related to the internal audit function, applicable since 2011

of only one particular element of corporate governance might not lead to better performance. Research done by Cheung, Evans and Nagarajan (2008) reveals that the corporate governance attributes are working simultaneously, meaning that in some cases they may substitute for each other, while in other cases they may be complementary. Further on, in their study, Vo and Nguyen (2014, p.11) propose solutions for companies to “enhance firm performance through improving corporate governance”. All these studies show to some extent that there is a correlation between corporate governance and company performance.

On the other hand, there are empirical studies, most of them not so recent, that have not found a statistically significant positive relationship between corporate governance improvements and improved company performance (Bhagat & Black, 2002; Ramadan El-Faitouri, 2014; Baysinger & Butler, 1985; Hermalin & Weisbach, 1991).

2.3. Independence of the Board and Company Performance

The board of directors has been recognized as an important corporate governance mechanism and in light with all the corporate scandals that happened throughout the years more and more regulation was aimed towards improving the structure and the independence of the boards (Sarbanes Oxley Act of 2002 in US, EU 8th Company Law Directive, etc.)

According to the Macedonian Company Law of 2004, the independence of board members is measured through:

- not having any material interest or business relation with the company directly as a business partner, a member of the management body, supervisory body or an officer of;
- not receiving from the company additional income, again within the previous 5 (five) years,
- not being a relative of any of the members of the management body, supervisory board or the officers of the company; and
- not bring a shareholder with more than 1/10 of the shares in the company.

Many researchers have proven that board independence is important not only for the companies, but for the overall economy. For example, Collier (2006) argues that strengthening board independence and other company-level mechanisms of corporate governance could improve the weakness of the companies, thus attract foreign investment, and consequently have significant positive influence on the economy.

Typical one tier board of directors consists of two types of directors, executive and non-executive. Mostly, the non-executive directors are seen as “significant long-term and impartial decision-makers and overseers of the governance process” (Higgs, 2003, p. 93). Hence, outside independent board members are perceived as directors that take a “fresh, objective look at business challenges and opportunities, and offer advice that synthesizes the perspectives of all parties while enabling the company to pursue short- and long-term business objectives” (Eimer, 2008).

The past literature shows inconclusive at times and historically mixed findings regarding the relation between board independence and company performance. Namely, some studies have found an insignificant relationship between the presence of outside independent directors and company financial performance (Hermalin & Weisbach, 1991; Bhagat & Black, 2000; Klein, 2002; Garg, 2007), while other studies have shown that there is a positive relationship between board independence and firm performance (Abdullah, 2004; Ameer, Ramli & Zakaria, 2010; Leung, Richardson & Jaggi, 2013).

2.4. Internal Audit Function and Company Performance

The Internal Audit Function is one of the most important functions when it comes to enhanced corporate governance and sound running of a company. Organizing an internal audit function is crucial, as it is a unit that keeps track and oversees the operations of all the units in a company. Management of a company that is striving to protect the interests of all the stakeholders should make sure that the company has “independent, objective” (Pickett, 1976) strong and influential internal audit function.

Generally, previous literature dedicated to examining the relationship between internal audit and company performance is limited. Past studies were mostly focused on the relationship of the external audit or characteristics of an audit committee and company performance (Hassan & Farouk, 2014; Kipkoech & Rono, 2016; Zraiq & Fadzil, 2018). There are some, but not many, studies that focus on characteristics of the internal audit function and company performance (Hutchinson & Zain, 2009; Al-Matari, Al-Swidi & Fadzil, 2014).

This study explores if the mere existence of internal audit function, in combination with other corporate governance improvements, such as board independence, can influence company performance.

3. HYPOTHESIS AND METHODOLOGY

The hypothesis of the research is:

Hypothesis: *Corporate governance improvements such as board independence and internal audit function have positive impact on the performance of the Macedonian companies.*

Below, the methods used to test the hypothesis are presented.

3.1. Type of data, research approach and methods of data collection

This study considers the effect of certain corporate governance improvements on the performance of the Macedonian companies, by extracting data from annual reports of all the companies on the super and regular listing on the Macedonian Stock Exchange. In order to confirm the hypothesis and to meet the research objectives, both secondary and primary data were used, for the documentary and empirical investigation respectively.

The periods that were researched are the years 2003 and 2004, as period prior to the adoption of the current Company Law of 2004⁵ (including the changes of the Law related to the internal audit function, applicable since 2011) and the years 2014, 2015, 2016, 2017 and 2018 as a post adoption of the Law period.

During the periods stated above (2003-2004 and 2014, 2015, 2016, 2017 and 2018) 66 companies in total were regularly or from time to time, listed on super and regular listing on the Macedonian Stock Exchange. Only certain number of those companies was chosen for future analysis in this paper because of data availability for the referred periods. The companies included in the research were: Alkaloid Skopje, Beton Skopje, Granit Skopje, Fersped Skopje, DS Smith AD Skopje, Hoteli Metropol Ohrid, Makpetrol Skopje, Makedonijaturist Skopje, Replek Skopje, RZ Inter-transped Skopje, RZ Uslugi Skopje, Skopski Pazar Skopje, Makstil Skopje, Teteks Tetovo, Tutunski

⁵ Prior to 2004 there was no legal requirement to have independent members on the boards.

kombinat Prilep, Vinarska vizba Tikves Skopje, Toplifikacija Skopje, Vitaminka Prilep, Zito luks Skopje, ZK Pelagonija Bitola and Makosped Skopje. Banks were not part of the research due to different regulations and corporate governance standards.

The performance indicators used were Profit, Return on Equity (ROE) and Earnings per Share (EPS), obtained mostly from annual reports of the stated companies.

The study used descriptive and comparative analysis to assess and analyze the collected data.

3.2. Correlation

The purpose of the correlation is to determine whether there is a quantitative agreement between the variations of the observed phenomena (correlation link) and if there is a degree or intensity (Damghani, 2013). If two phenomena are observed, there is a simple correlation, and in the analysis of multiple phenomena there are multiple correlations. In a simple correlation it is possible to examine whether there are linear or curvilinear correlations between the phenomena.

4. RESULTS AND ANALYSIS

This study initially started to analyze 21 companies (twenty one companies continuously quoted from 2003 to 2018 on super listing and regular listing) in terms of Profit, ROE, EPS, number of independent directors and existence or not of internal audit function (for 2014, 2015, 2016, 2017, 2018), for the years 2003 and 2004 versus 2014, 2015, 2016, 2017 and 2018.

The calculations below were made on the one tier and two-tier management systems, since 11 companies had two-tier and 10 companies had one tier management system. Considering the fact that the independence of the members in this paper was majorly mentioned as independence of the board of director's members, which is a board common for the one-tier management system, it is necessary to clarify that the independence requirement in the two-tier management system refers to independence of the Supervisory Board members.

Analysis of the correlation between the change of the number of independent members on one side and the increase/decrease of the Profit, ROE, EPS indicators, by years, on the other side, was made. Comparing the years 2003-2004 with the years 2014-2018, most of the companies in 2003-2004, except for 6 companies, did not have independent members in their boards, while stating from 2014 all the companies have independent members in their boards.

As for the internal audit function, analysis of the available data showed that since 2011 all of the listed companies had internal audit functions, since it was a legal requirement starting from the same year.

On the other hand, the growth rates for the stated periods of the Profit, ROE and EPS are inconsistent.

4.1. First Analysis

In the period 2003-2018, for six companies the number of independent members did not change, meaning that these companies had independent member/s throughout the entire period. They had interdependent members even in the years 2003-2004, when most of the other analyzed companies did

not have independent members, due to the fact that there was no legal requirement to have such members. These 6 companies thought, could not be analyzed in terms of board independence influence on Profit, ROE and EPS, since they continuously had the same number of independent members.

Therefore, the final analysis was made on 15 companies that had changes in the variables, which could be used for the purpose of the analysis. These companies are:

Beton, Granit, Hoteli Makpetrol the number of the independent members has increased from 0 to 1 in 2004-2014, and the profit has increased as well. The increase happened in ROE and EPS (except in Granit's EPS which was decreased). Therefore, positive correlation was found.

Fersped, DS Smith, RZ Uslugi, Skopski Pazar, ZK Pelagonija, Makosped, the number of the independent members has increased from 0 to 1 in 2004-2014, but the profit has decreased. The decrease happened with the ROE and EPS as well (except in Skopski Pazar's EPS and Makosped's ROE which were increased instead of decreased). Therefore, negative correlation was found in these cases.

Replek and Tutunski Kombinat Prilep, the number of the independent members has increased from 0 to 2 in 2004-2014, and the profit (the loss in Tutunski Kombinat was decreased) has increased as well. The increase happened in ROE and EPS (except in Tutunski kombinat where ROE and EPS were decreased). Therefore, positive correlation was found.

RZ Inter-Transsped and Teteks, the number of the independent members has increased from 0 to 2 in 2004-2014, but the profit has decreased. The decrease happened with the ROE and EPS as well. Therefore, negative correlation was found.

Makedonijaturist, the number of the independent members has increased from 0 to 3 in 2004-2014, and the profit has increased as well. The increase happened in EPS and ROE. Positive correlation was found.

Vinarska Vizba Tikves (which was one of the six companies that had independent members in the board even in 2003-2004), the number of the independent members has decreased from three to one in 2004-2014, but the profit has increased. The increase happened in ROE, but not in EPS. Therefore, negative correlation was found.

4.2. Second Analysis

Second analysis was made on the correlation coefficient between the total number of independent members in all the companies and the profit of all the companies, by years. The value of the coefficient is 0.47 (see Table 1 below), which means that there is positive correlation found.

Table 1. Correlation

	Years						
Coefficient of correlation	2003	2004	2014	2015	2016	2017	2018
Total number of independent directors	11	11	30	30	29	28	28
Total profit of all companies	515.429	811.287	509.011	1.418.591	1.164.183	1.217.989	2.211.309
Total Coefficient of correlation for all companies and years	0,475433138						

Note: Coefficient of correlation could not be calculated for individual companies annually, neither periodically, due to the statistically insignificant number of independent members.

5. LIMITATIONS AND FUTURE STUDIES

The study has limitations that could be addressed in future research, such as:

- **Data availability and verification limitations**

From the beginning of the research, the collection of the necessary data was challenging due to various reasons. Referring to the annual reports on the operation of the companies and the financial statements of the companies listed in 2003 and 2004, parts of the reports could not be found, since in accordance with the rules applicable at that period, not all companies were required to disclose the analyzed information, and not all data was kept in electronic form. Trying to overcome this obstacle, part of the information was collected from proxy statements, official company websites, the website of the Macedonian Securities Exchange Commission (seinet.com.mk), and direct communication with authorized persons in the companies. For the 21 selected companies, most of the data was gathered, with minor exception of several companies. For the period 2014, 2015, 2016, 2017 and 2018 the data was gathered more easily, since with the adoption of the Corporate Governance Code in 2006, the companies listed on the Macedonian Stock Exchange were required to disclose financial and other company data relevant for this research.

When trying to analyze the ROE and EPS data, gathering the data for the period 2003-2004 was challenging, since out of 21 analyzed companies, all of the companies had disclosed data about ROE, for all the relevant years, while most of the companies had not disclosed EPS data for the period 2003-2004.

Lastly, given the history of accounting scandals, limitation such as manipulation of financial statements should also be mentioned, even though most of the financial statements were audited.

- **Limitations in terms of correlation between the given indicators and the company performance**

Other factors, apart from independence of the board members and existence of internal audit function may influence company performance. Other industry and company specific or presumably institutional and market parameters may affect the results. Future studies may include more variables than the given ones.

- **Limitations in terms of limited number of analyzed companies in the study**

The analysis was made on companies listed on the Macedonian Stock Exchange since these are the companies that had most of the disclosure and transparency requirements, given the fact that the Macedonian companies in comparison with international companies have a lot to learn about disclosing information to the public. Therefore, studies with larger and random samples of companies from different countries may be conducted in the future.

- **Cultural limitations**

The study could not determine whether the independence of the board members and the existence of the internal audit function were actually mechanisms used by the companies in practice or only on paper. This means that, the study covered all the companies that

had independent board members and internal audit functions without having information on whether these two corporate governance improvements existed in these companies in reality or the companies had them just to satisfy legal requirements, without actually using these benefits in practice.

6. CONCLUSION

This study aims towards contributing to the previous literature showing that there is positive correlation between corporate governance mechanisms and company performance. It specifically focuses on the correlation of the independent board members and internal audit function and company performance of the companies listed on the Macedonian Stock Exchange, for specific periods 2003-2004 vs. 2014-2018.

Concisely, this study finds that as the numbers of independent board members is increasing, and the internal audit function is introduced as mandatory function, the selected indicators of company performance in majority of the cases increase as well, thus leading to positive correlation.

Consequently, this study concludes that, corporate governance improvements such as board member independence and internal audit function have positive impact on the performance of the Macedonian companies.

REFERENCES

- Abdullah, S. (2004). Board composition, CEO duality and performance among Malaysian listed companies. *Corporate Governance*, 4(4), 47-61. <https://doi.org/10.1108/14720700410558871>
- Al-Matari, E. M., Al-Swidi, A. K., & Fadzil, F. H. (2014). The Measurements of Firm Performance's Dimensions. *Asian Journal of Finance & Accounting*, 6(1), 24-49. <https://doi.org/10.5296/ajfa.v6i1.4761>
- Al-Saidi, M., & Al-Shammari, B. (2015). Ownership concentration, ownership composition and the performance of the Kuwaiti listed non-financial firms. *International Journal of Commerce and Management*, 25(1), 108-132. <https://doi.org/10.1108/ijcoma-07-2013-0065>
- Ameer, R., Ramli, F., & Zakaria, H. (2010). A new perspective on board composition and firm performance in an emerging market. *Corporate Governance: The International Journal of Business in Society*, 10(5), 647-661. <https://doi.org/10.1108/14720701011085607>
- Apostolov, M. (2011). Corporate governance in Macedonia - Micro and macro analysis. *Risk Governance and Control - Financial Markets and Institutions*, 1(1), 124-134.
- Bauer, R., Frijns, B., Otten, R., & Tourani-Rad, A. (2008). The impact of corporate governance on corporate performance: Evidence from Japan. *Pacific-Basin Finance Journal*, 16(3), 236-251. <https://doi.org/10.1016/j.pacfin.2007.05.001>
- Baysinger, B. D., & Butler, H.N. (1985). Corporate governance and the board of directors: Performance effects of changes in board composition. *Journal of Law, Economics, & Organization*, 1(1), 101-124.
- Bhagat, S. & Black, B. (2002). The Non-correlation between board independence and long-term firm performance. *Journal of Corporation Law*, 27, 231-273. *Review of Quantitative Finance and Accounting*, 31(2), 461.
- Christensen, J., Kent, P., Routledge, J., & Stewart, J. (2015) *Do corporate governance recommendations improve the performance and accountability of small listed companies?* *Journal Accounting & Finance*, 55(1), 133-164.

- Coles, J., & Hesterly, W. (2000). Independence of the chairman and board composition: Firm choices and shareholder value. *Journal of Management*, 26(2), 195-214. <https://doi.org/10.1177/014920630002600202>
- Committee on the Financial Aspects of Corporate Governance., & Cadbury, A. (1992). *Report of the Committee on the Financial Aspects of Corporate Governance*. London: Gee.
- Damghani, B. M. (2013). The non-misleading value of inferred correlation: An introduction to the Cointelation Model. *Wilmott*, 2013(67), 50-61. <https://doi.org/10.1002/wilm.10252>
- El-Faitouri, R. (2014). Board of directors and Tobin's Q: Evidence from U.K. firms. *Journal of Finance and Accounting*, 2(4), 82-99. <https://doi.org/10.12691/jfa-2-4-2>
- Eimer, J. (2008). Is electing an independent board member right for your business? Exploring the pros and cons. Retrieved from <https://www.muchlaw.com/insights/article/electing-independent-board-member-right-your-business-exploring-pros-and-cons>
- European Central Bank. (2004). *Annual Report: 2004*. Retrieved from <https://www.ecb.europa.eu/pub/pdf/annrep/ar2004en.pdf>
- Garg, A. K. (2007). Influence of board size and independence on firm performance: A study of Indian companies. *Vikalpa: The Journal for Decision Makers*, 32(3), 39-60. <https://doi.org/10.1177/0256090920070304>
- Hassan, S. U. & Farouk, M. A. (2014). Board of director's characteristics and performance of listed deposit money banks in Nigeria. *Journal of Finance and Bank Management*, 2(1), 89-105.
- Hassan, R., Marimuthu, M., & Juhl, S. (2015). Ethnic diversity on boards and market performance: An empirical investigation in Malaysia. *Advanced Science Letters*, 21(5), 1099-1103. <https://doi.org/10.1166/asl.2015.6036>
- Hermalin, B., & Weisbach, M. (1991). The effects of board composition and direct incentives on firm performance. *Financial Management*, 20, 101-112.
- Higgs, D. (2003). *Review of the role and effectiveness of non-executive directors*. [PDF file]
- Ho, C. (2005). Corporate governance and corporate competitiveness: An international analysis. *Corporate Governance: An International Review*, 13(2), 211-253. <https://doi.org/10.1111/j.1467-8683.2005.00419.x>
- Hutchinson, M., & Zain, M. (2009). Internal audit quality, audit committee independence, growth opportunities and firm performance. *Modern Pathology*, 7(2), 50-65. <https://doi.org/10.22495/cocv7i2p4>
- Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, 33(3), 375-400. [https://doi.org/10.1016/S0165-4101\(02\)00059-9](https://doi.org/10.1016/S0165-4101(02)00059-9)
- Kipkoech, S. R., & Rono, L. (2016). Audit committee size, experience and firm financial performance. Evidence Nairobi Securities Exchange, Kenya. *Research Journal of Finance and Accounting*, 7(15), 87-95. <https://www.iiste.org/Journals/index.php/RJFA/article/view/32732>
- Leung, S., Richardson, G., & Jaggi, B. (2014). Corporate board and board committee independence, firm performance, and family ownership concentration: An analysis based on Hong Kong firms. *Journal of Contemporary Accounting & Economics*, 10(1), 16-31. <https://doi.org/10.1016/j.jcae.2013.11.002>
- Organization for Economic Co-operation and Development. (2004). *OECD Principles of corporate governance*. Paris: OECD.
- Pickett, S. (1976). *The internal audit handbook*. Retrieved from https://www.academia.edu/11623270/Audit_Internal-Picket_and_Spencer_Internal_Auditing
- Shukeri, S. N., Shin, O. W., & Shaari, M. S. (2012). Does board of director's characteristics affect firm performance? Evidence from Malaysian public listed companies. *International Business Research*, 5(9). <https://doi.org/10.5539/ibr.v5n9p120>

- Tachiwou, A. M. (2016). Corporate governance and firms' financial performance of listed company in the West African Monetary Union (Wamu) regional financial exchange. *International Journal of Economics and Finance*, 8(8), 212. <https://doi.org/10.5539/ijef.v8n8p212>
- Tehrani, N. (2019). Investigating the effects of corporate governance system quality on company performance. *International Academic Journal of Accounting and Financial Management*, 06(01), 56-65.
- Velnampy, T. (2013). Corporate governance and firm performance: A study of Sri Lankan manufacturing companies. *Journal of Economics and Sustainable Development*, 4(3), 228-235.
- Vo, D., & Nguyen, T. (2014). The impact of corporate governance on firm performance: Empirical study in Vietnam. *International Journal of Economics and Finance*, 6(6), 11. <https://doi.org/10.5539/ijef.v6n6p1>
- Zraiq, M.A.A., & Fadzil, H.B.F. (2018). The impact of ownership structure on firm performance: Evidence from Jordan. *International Journal of Accounting, Finance and Risk Management*, 3(1), 1-4. <https://doi.org/10.11648/j.ijafm.20180301.12>

THE INFLUENCE OF FOREIGN DIRECT INVESTMENT ON SELECTED ECONOMIES IN CENTRAL EUROPE

Jaroslav Škrabal¹ 

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Abstract: *Nowadays, the decline in agricultural land is more evident than in the previous decades, and land is becoming a valuable natural resource. Agricultural land often gives way to construction activities, leading to the degradation of land resources almost all over the world. Foreign direct investment also affects the decline in agricultural land. The aim of this paper is to determine the influence of foreign direct investment (FDI) on the situation in individual economies in Central Europe (the Czech Republic, Slovakia, Germany, Austria, Poland and Hungary). In general, foreign direct investment reflects the intention of a resident of one economy (the direct investor) to acquire a permanent interest in an entity resident in an economy other than that of the investor. The paper focuses on FDI values and numbers on Greenfields in given economies and consequently how FDI significantly influence macroeconomic indicators such as GDP and unemployment in selected economies. The analyzed period is from 2003 to 2018. Data are obtained through the Eurostat, OECD, The World Bank and UNCTAD. In the period of recession (2009-2010), the FDI and GDP values in the economies are expected to be on a downward trend compared to unemployment, which will be higher than in previous years.*

Keywords: *FDI, GDP, Unemployment, Greenfields, Agricultural Land.*

JEL Classification E22 · E24

✉ skrabal@opf.slu.cz

¹ Department of Economics and Public Administration, School of Business Administration in Karviná, Silesian University in Opava, Univerzitní náměstí 1934/3, 733 40, Karviná, Czech Republic

1. INTRODUCTION

Investing in business are defined in general economic theory, for example, as „the decision to give up consumption at present with a view to higher production in the future” (Samuelson and Nordhaus, 2007). In general, foreign direct investment reflects the intention of a resident of one economy (a direct investor) to acquire a permanent interest in an entity resident in an economy other than that of the investor (Šímanová, 2011, p. 26). The inflow of foreign direct investment (FDI) is often considered to be one of the factors increasing the country’s economic growth (Hunady and Orviska, 2014). According to Demakas et al. (2007) there is a substantial theoretical literature on the determinants of FDI. One of the first models, the internationalization framework of ownership - the placement - proposed by Dunning (1977), explains the firm’s decision to invest abroad in terms of acquiring market power (ownership), taking advantage of placement (placement) and direct execution of operations than through market agreements (internalization). The following articles have expanded this model. In the more recent literature (Navaretti and Venables, 2004), the explanatory FDI variables are divided into three broad groups: trade costs (including distance), market size and differences in production costs. According to Amoroso and Müllerová (2018), most of the relevant literature deals with the impact of FDI on proxies of economic growth, such as capital accumulation, growth in total factor productivity (TFP) and growth in gross domestic product (GDP). Recently, more and more studies deal with the relationship between foreign direct investment (cross-border mergers and acquisitions, mergers and acquisitions) and the entry of new local businesses or survival of the company (De Backer and Sleuwaegen 2003; Ayyagari and Kosová 2010; Munemo 2014; Danakol et al., 2017). Creating new businesses - or doing business in general - offers a new perspective on the effects of foreign direct investment on the host economy. The entry of new domestic firms is often seen as a key driver of economic growth and job creation and has become the primary target of policy makers. As in the relationship between FDI and other growth indicators, the interaction between FDI and business is shaped by complex dynamics such as vertical and horizontal spillovers of industries (Markusen and Venables 1999) and the regulation on businesses creation (Munemo 2014). The traditional view of the effects of FDI suggests that FDI on Greenfields will increase productivity, employment and capital formation in host countries, while cross-border mergers and acquisitions only involve a change from local to foreign ownership of existing assets and production capacity (Norbäck and Persson 2005; Johnson et al. 2006; Ashraf et al. 2016).

The paper is conceived as follows, after the introduction is the second chapter focusing on the methodology of the article. The next chapter (third) deals with selected macroeconomic indicators in selected economies. The fourth chapter focuses in the article FDI and their impact on GDP, unemployment and agricultural land. At the end of the paper is conceived conclusion.

2. METHODOLOGY

The second chapter of the paper focuses on the methodology of the article. The aim of this paper is to determine the effect of foreign direct investment (FDI) on the situation in individual economies in Central Europe (Czech Republic, Slovakia, Germany, Austria, Poland and Hungary). The first part pays attention to the comparison of selected macroeconomic indicators, where the real rate of GDP growth is taken into account. According to Majerová (2019, p. 22), economic maturity expressed in terms of gross domestic product per capita and GDP growth are very important indicators of the macroeconomic condition of the economy. Another part of the paper deals mainly with FDI and its influence on basic indicators, where the rate of unemployment and the state of agricultural land in individual economies were selected. The data contained in this paper is provided

through secondary data in databases such as Eurostat, OECD, The World Bank and UNCTAD. The analyzed period from the given data is mainly from 2005 to 2018.

3. MACROECONOMIC INDICATORS IN SELECTED ECONOMIES

Figure 1 shows real GDP growth rate as a percentage of given economies. The figure shows that most countries (except Poland) in 2009 it reached negative values within real GDP growth rate. The most dramatic decline in this indicator was mainly for Hungary and Germany. In 2009, Poland showed a slight decline in GDP growth rate compared to the remaining countries. Another reversal for the economies was 2012 and 2013, when it can be said that the economies were losing real GDP growth again, especially in Hungary. In recent years can be seen in the given real GDP growth in less developed economies such as the Czech Republic, Slovakia, Poland and Hungary. This is mostly a 'catching-up effect', with less developed economies growing significantly faster than developed economies and 'catching up' with economic growth. The causes of faster economic growth in less developed countries may include structural changes in investment, policy changes, technological progress, new export opportunities. The expected finding in 2019 is mainly the value of real GDP growth in Germany when it showed a decline since 2017 and in 2019 the growth rate was 0.6%. In 2020, all the economies shown below are expected to show negative real GDP growth rates.

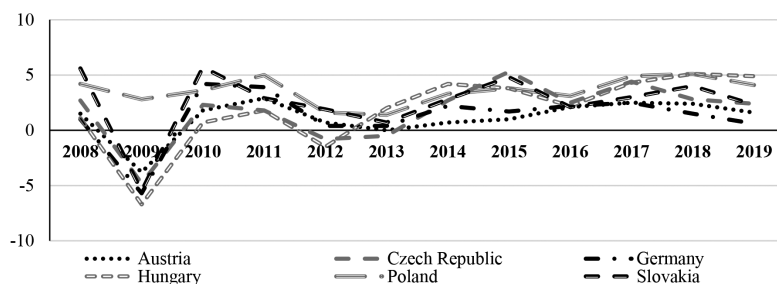


Figure 1. Real GDP Growth Rate % in selected economies
Source: Eurostat (2008-2019); own elaboration (2020)

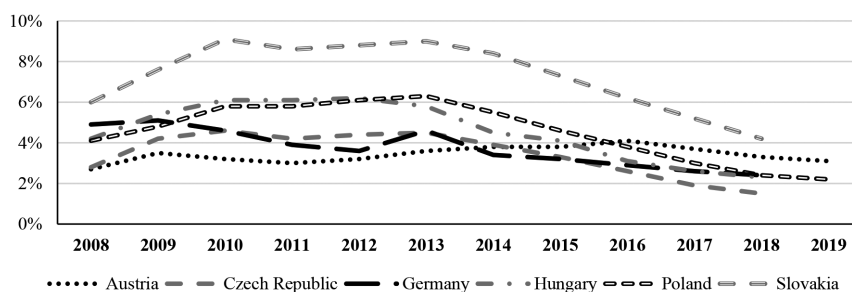


Figure 2. Percentage of Unemployment in Selected Economies
Source: Eurostat (2008-2019); own elaboration (2020)

The next figure (Figure 2) pays attention to the real unemployment rate in the economies of the total population. The figure shows that the highest unemployment rate is mainly in Slovakia, when in 2010 the unemployment rate was at 9.1% and it was the highest unemployment rate among all the economies surveyed within the given time period. During the recession in Austria and the Czech Republic, the unemployment rate was favorable compared to Slovakia. It is important to note that these are annual values per country. It is evident that the values within regions will be

much different and only in times of economic recession. From 2016 to the present, you can see a decline in the unemployment rate in the economies. This is largely due to a well-functioning economy and the fact that firms experienced a boom in some countries until 2018 and in 2019, when there was a labor shortage on the labor market.

Another macroeconomic indicator in the performance of economies is the gate of inflation, as shown in Figure 3. We can say that during the recession in most countries except Hungary and Poland, countries experienced a fall in the inflation rate. Hungary showed different fluctuations in inflation during the reporting period. The biggest inflation rate was measured in 2008 and 2012. In recent years, the inflation rate in Hungary has remained at acceptable levels. In Poland and Slovakia, a negative value of the inflation rate was measured in 2015 and 2016, when it is deflation. We are talking about deflation when the inflation rate falls below 0% (a negative inflation rate). Unlike inflation, deflation increases the purchasing power of money. Deflation also has a negative impact on export-oriented firms by making their production abroad more expensive. In the period from 2014 to 2016, other countries showed a decline in the inflation rate to the very border, with some of the inflation rates lower than the economic recession in the period under review. Since 2017, countries have been showing acceptable inflation rates.

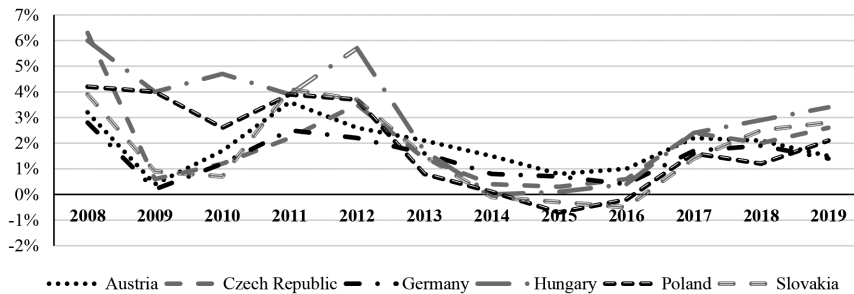


Figure 3. Inflation Rate (%) in Selected Economies
Source: Eurostat (2008-2019); own elaboration (2020)

4. FDI IN SELECTED ECONOMIES

The fourth chapter will focus on the issue of foreign direct investment (FDI) in selected economies. In the first part of this chapter, the author pays attention to the inflow of FDI flows into individual economies. The following section deals with the situation of comparing individual economies based on the FDI inflow and changing the unemployment rate. The last part of this chapter focuses on comparing the situation of the inflow of FDI flows into individual economies against the change of agricultural land in these economies.

The next figure (Figure 4) shows the inflow of FDI to individual economies in mil. €. The figure shows that in the period under review the largest inflow of FDI was mainly in Germany. Between 2007 and 2008, we can see a dramatic drop in the country's FDI inflow in that country. In the given period due to the economic recession, the decline in value of 48 721 mil. €. Germany has managed to correct the FDI inflow again, but only until 2012, when a steady decline has been observed since that year, with occasional fluctuations leading to a negative FDI inflow in 2014. In the last year analyzed, the decline in FDI inflows in Germany is again apparent. The other countries reported an FDI inflow to Austria and Hungary, when Austria recorded a negative FDI inflow to its country. A similar situation is also evident in Hungary, which in 2015 shows a dramatic decline in FDI in negative values.

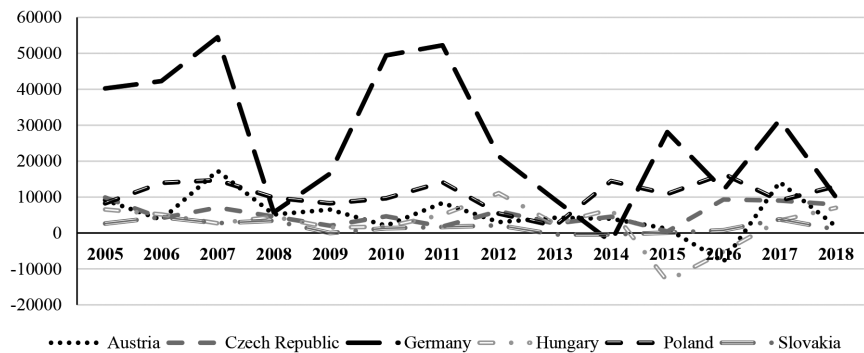


Figure 4. FDI inflows into selected economies in mil. €
Source: OECD (2005-2018); own elaboration (2020)

The following figure (Figure 5) shows the average flows of foreign direct investment (FDI) divided by gross domestic product (GDP). Data are expressed as a percentage of GDP to eliminate the effect of differences in the size of the reporting countries' economies. If we look at the above picture, we can see a significant drop in these values in Hungary in 2015, but in 2016 the figure was 37% of GDP. The opposite situation in that year was in Austria, which in 2016 had a fall in the values to 8.6%. In the last year analyzed (2017), in addition to Hungary, we can see a percentage of GDP growth in the average FDI flows.

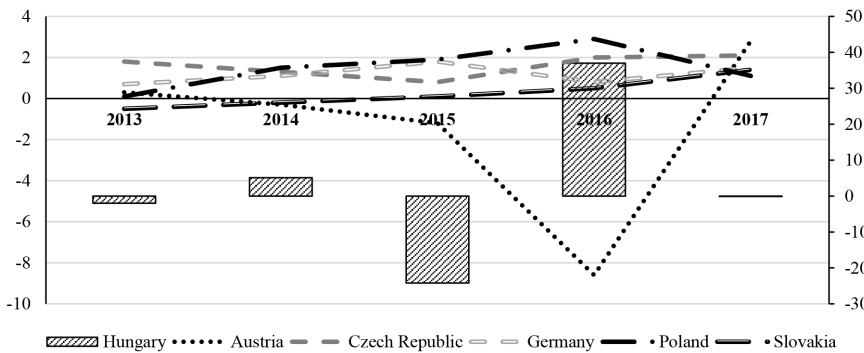


Figure 5. Average FDI flows divided by GDP (in % GDP)
Source: Eurostat (2013-2017); own elaboration (2020)

FDI has some effect on unemployment rate that if an investor decides to invest in that country, this will create new jobs. The inflow of FDI into the countries can also have a positive impact on the unemployment rate. The figures below (Figure 6 - Figure 11) show the FDI inflow situation in € million on the left-hand axis and the right-hand scale show the unemployment rate as a percentage. The analyzed period is from 2008 to 2018. The figure shows that the greatest impact of the FDI inflow on unemployment is mainly in the Czech Republic, Poland, Slovakia and Austria. Here is a certain degree of impact where FDI's have an impact on the unemployment rate. Unlike Germany and Hungary, where the effect of FDI inflows on unemployment rates has not been demonstrated in these countries.

The following figure (Figure 12) shows the number of reported FDI on Greenfields by destination. The analyzed period is from 2003 to 2018. Right axis (curves) shows economies such as Poland, Hungary, the Czech Republic, Slovakia and Austria. The left side shows the number of reported FDI's on Greenfields in Germany. All values in this figure are in the number of projects notified.

The figure below shows that most economies show an increase in these announced projects by 2008. In 2009, a decrease in these projects on Greenfields is apparent. In the following years, we can especially see in Germany an increase in the number of projects announced by 2017. In the last year analyzed (2018), there is a marked decrease in these notified projects. The year-on-year decline in the given projects in the given economy is 484. Other economies, with some exceptions since 2010, showed mainly a decline in these values. It is interesting to note that in Poland since 2015 there has been an increase in the number of FDIs on Greenfields, when in 2018 their number is 440. This number is higher than before the economic recession in 2008. Other economies except Slovakia showed mainly an increase in the number of reported FDI at Greenfields in the last analyzed year.

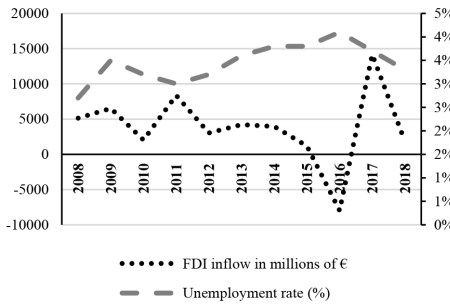


Figure 6. Relation between FDI and unemployment rate in Austria



Figure 7. Relation between FDI and unemployment rate in Czech Republic

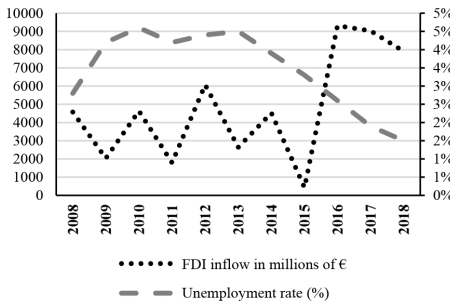


Figure 8. Relation between FDI and unemployment rate in Germany

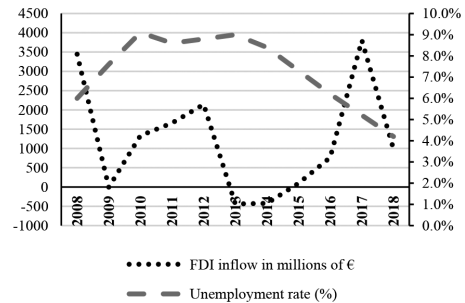


Figure 9. Relation between FDI and unemployment rate in Hungary

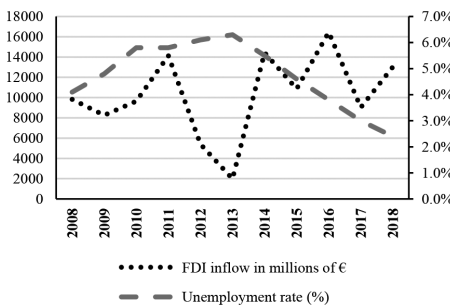


Figure 10. Relation between FDI and unemployment rate in Poland

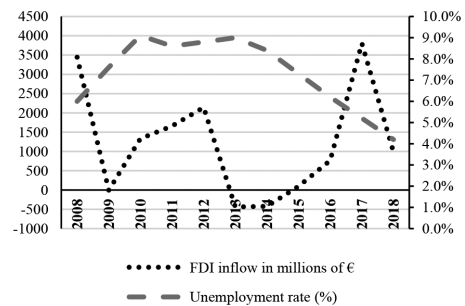


Figure 11. Relation between FDI and unemployment rate in Slovakia

Source: OECD, Eurostat (2008-2018); own elaboration (2020)

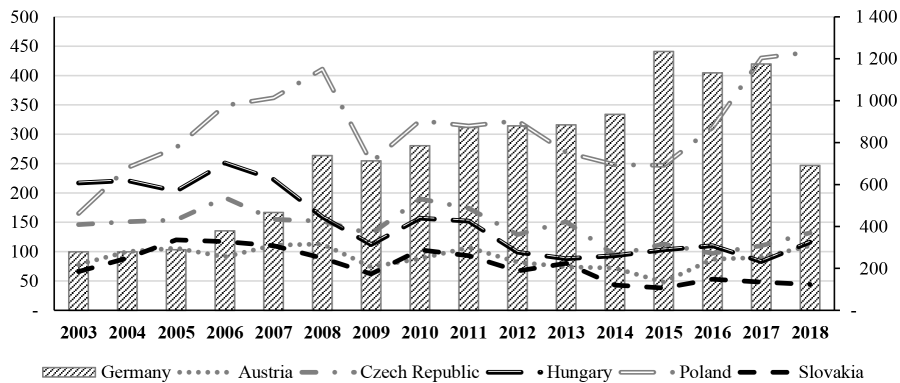


Figure 12. Number of notified FDI at Greenfields by destination
Source: UNCTAD (2003-2018); own elaboration (2020)

Along with the previous figure (Figure 12), there is a section below that focuses on the FDI inflow of agricultural land loss in these economies. The analyzed period is from 2005 to 2016. The results shown in the figures (Figure 13 to Figure 18) show an indirect effect of FDI development and agricultural land loss in the economies. It is important to point out that the analyzed period is short. In general, building new businesses on Greenfields generally reduces the amount of agricultural land in the economies. Within the above figures, the noticeable drop in the agricultural land curve is mainly influenced by land grabbing or agricultural land transfer. The most demonstrable effect, when due to FDI inflow into the economy has an impact on the loss of agricultural land is mainly in the Czech Republic. Other economies do not show such intensity between the inflow of FDI and the loss of agricultural land.

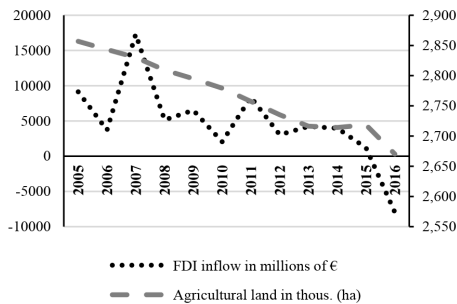


Figure 13. Relation of FDI and agricultural land (ha) in Austria

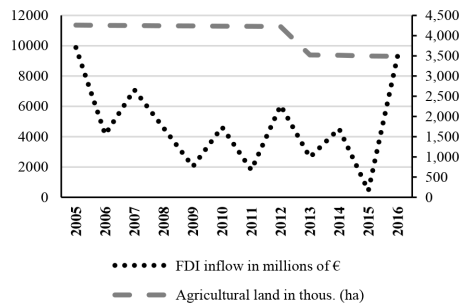


Figure 14. Relation of FDI and agricultural land (ha) in Czech Republic

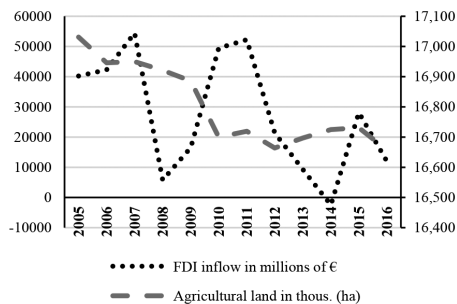


Figure 15. Relation of FDI and agricultural land (ha) in Germany

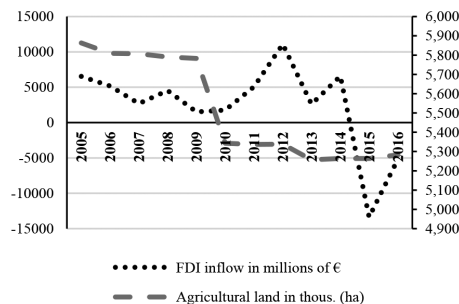


Figure 16. Relation of FDI and agricultural land (ha) in Hungary

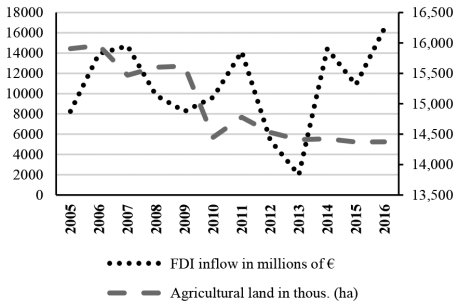


Figure 17. Relation of FDI and agricultural land (ha) in Poland

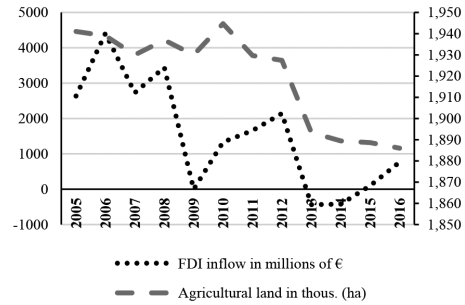


Figure 18 Relation of FDI and agricultural land (ha) in Slovakia

Source: OECD, World Bank (2005-2016); own elaboration (2020)

5. CONCLUSION

This paper deals with selected macroeconomic indicators and FDI in selected economies of Central Europe. The aim of this paper was to determine the impact of foreign direct investment on the situation in individual economies in Central Europe. It was found in the comparison of individual economies that the inflow of FDI in some way has the effect of reducing the unemployment rate in those economies, especially in the Czech Republic, Poland, Slovakia and Austria. Furthermore, the paper dealt with the situation of the inflow of FDI against the loss of agricultural land. In recent years, the decline of agricultural land not only in Central Europe has been caused by the construction of logistics and production centers on Greenfields. The results did not unequivocally prove a certain dependence in given economies except for the Czech Republic, where there was some weak dependence. It is important to point out that only ten periods were monitored. The author of the paper also wants to deal with this topic in order to find out what direct and indirect impact FDI has on individual economies, especially in Central Europe.

ACKNOWLEDGMENT

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REFERENCES

- Amoroso, S., & Müller, B. (2017). The short-run effects of knowledge intensive greenfield FDI on new domestic entry. *The Journal of Technology Transfer*, 43, 815–836. <https://doi.org/10.1007/s10961-017-9575-y>.
- Ashraf, A., Herzer, D., & Nunnenkamp, P. (2016). The effects of greenfield FDI and cross-border M&As on total factor productivity. *The World Economy*, 39(11), 1728–1755. <https://doi.org/10.1111/twec.12321>.
- Ayyagari, M., & Kosová, R. (2010). Does FDI facilitate domestic entry? Evidence from the Czech Republic. *Review of International Economics*, 18(1), 14–29. <https://doi.org/10.1111/j.1467-9396.2009.00854.x>.
- Danakol, S. H., Estrin, S., Reynolds, P. D., & Weitzel, U. (2017). Foreign direct investment and domestic entrepreneurship: Blessing or curse? *Small Business Economics*, 48(3), 599–612. <https://doi.org/10.1007/s11187-016-9792-z>.

- De Backer, K., & Sleuwaegen, L. (2003). Does foreign direct investment crowd out domestic entrepreneurship? *Review of Industrial Organization*, 22(1), 67–84. <https://doi.org/10.1023/A:1022180317898>.
- Demakas, G. D., Horváth, B., Ribakova, E., & Wu, Y. (2007). Foreign direct investment in European transition economies—The role of policies. *Journal of Comparative Economics*, 35(2), 269–386. <https://doi.org/10.1016/j.jce.2007.03.005>.
- Dunning, H. J., (1977). Trade, Location of Economic Activity and the MNE: A Search for an Eclectic Approach. *The International Allocation of Economic Activity*, 395–418. https://doi.org/10.1007/978-1-349-03196-2_38.
- Eurostat (2020). *FDI flows intensity* [online]. [cit.2020-03-25]. Available at: <https://ec.europa.eu/eurostat/databrowser/view/tec00107/default/table?lang=en>.
- Eurostat (2020). *HICP - inflation rate* [online]. [cit.2020-03-24]. Available at: <https://ec.europa.eu/eurostat/databrowser/view/tec00118/default/table?lang=en>.
- Eurostat (2020). *Real GDP growth rate - volume* [online]. [cit.2020-03-22]. Available at: <https://ec.europa.eu/eurostat/databrowser/view/tec00115/default/table?lang=en>.
- Eurostat (2020). *Total unemployment rate* [online]. [cit.2020-03-20]. Available at: <https://ec.europa.eu/eurostat/databrowser/view/tps00203/default/table?lang=en>.
- Hunady, J., & Orviska, M. (2014). Determinants of Foreign Direct Investment in EU Countries – Do Corporate Taxes Really Matter? *Procedia Economics and Finance*, 12, 243–250. [https://doi.org/10.1016/S2212-5671\(14\)00341-4](https://doi.org/10.1016/S2212-5671(14)00341-4).
- Johnson, A. (2006). The Effects of FDI Inflows on Host Country Economic Growth. *Working Paper Series in Economics and Institutions of Innovation*, 58. Royal Institute of Technology, CESIS - Centre of Excellence for Science and Innovation Studies. <https://static.sys.kth.se/itm/wp/cesis/cesiswp58.pdf>
- Majerová, I. (2019). *Konkurenceschopnost vybraných ekonomik Střední Evropy*. Ostrava: Sokrates.
- Markusen, J. R., & Venables, A. J. (1999). Foreign direct investment as a catalyst for industrial development. *European Economic Review*, 43(2), 335–356. [https://doi.org/10.1016/S0014-2921\(98\)00048-8](https://doi.org/10.1016/S0014-2921(98)00048-8).
- Munemo, J. (2014). Business start-up regulations and the complementarity between foreign and domestic investment. *Review of World Economics*, 150(4), 745–761. <https://doi.org/10.1007/s10290-014-0189-2>.
- Navaretti, B. G., & Vnebles, J. A. (2004). *Multinational firms in the world economy*. Princeton Univ. Press, Princeton and Oxford. ISBN 978-0-691-12803-0.
- Norbäck, P. J., & Persson, L. (2005). Privatization policy in an international oligopoly. *Economica*, 72(288), 635–653. <https://doi.org/10.1111/j.1468-0335.2005.00436.x>.
- Samuelson, P. A., & Nordhaus, D. W. (2013). *Ekonomie*. 19. vyd. Praha: NS Svoboda. ISBN 978-80-205-0629-0.
- Šimonová, J. (2011). *Investiční pobídky, nadnárodní firmy a regionální rozvoj*. Liberec: Technická univerzita v Liberci. ISBN 978-80-7372-803-8.
- OECD (2020). *FDI inflows* [online]. [cit.2020-03-19]. Available at: <https://data.oecd.org/fdi/fdi-flows.htm#indicator-chart>.
- The World Bank (2020). *Area of agricultural land* [online]. [cit.2020-03-23]. Available at: <https://data.worldbank.org/indicator/AG.LND.AGRI.K2?end=2016&start=1993>.
- UNCTAD (2020). *Number of Announced greenfield FDI projects, by destination, 2008-2018*. [online]. [cit.2020-03-12]. Available at: <https://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx>.

HOW LONG IS THE MEMORY OF THE REGION LAC STOCK MARKET?

Paulo Alexandre¹ 

Rui Dias² 

Paula Heliodoro³ 

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Abstract: *Coronavirus Covid-19 is a type of outbreak that first appeared in December 2019 in the city of Wuhan, Hubei Province, China. It was declared a pandemic by the World Health Organization (WHO) on March 12, 2020. This trial aims to test the hypothesis of an efficient market, in its weak form, in the context of the global pandemic, in the financial markets of Argentina, Brazil, Chile, Colombia, Peru, Mexico. The sample comprises daily data from July 2015 to June 2020 and is divided into two sub-periods pre and during Covid-19. The purpose of this analysis was to answer whether: i) the global pandemic (Covid-19) increased synchronization in the financial markets under analysis? ii) if so, could the persistence of profitability delimit the hypothesis of portfolio diversification? The results of the Gregory-Hansen test show very significant levels of integration in the periods before and during the Covid pandemic. In addition, we found that most of the breaks in structure are in March 2020. The results of the DFA exponents show that during the pre-Covid period, the Peruvian market shows persistence, suggesting signs of inefficiency (long memories), while the Argentinean market shows anti persistence, and the remaining markets show an equilibrium trend. In addition, we found that during the COVID period the Chilean and Colombia markets show very significant signs of inefficiency, with moderate signs of in (efficiency) the Argentinean, Brazilian and Peruvian markets. In addition, we verified that the Mexican market shows signs of anti-persistence. In conclusion, the emerging markets of Latin America show, for the most part, long persistent and significant memories during the Covid pandemic outbreak, that is, they show signs of in (efficiency). The authors consider that the results achieved are of interest to investors seeking opportunities in these stock exchanges, as well as to policy makers to carry out institutional reforms in order to increase the efficiency of stock markets and promote the sustainable growth of financial markets.*

Keywords: *Covid-19; Market efficiency; Financial integration; Portfolio diversification.*

JEL Classification C58 · G10 · G11 · G12 · G14 · G15 · F30

✉ paulo.alexandre@esce.ips.pt

¹ Polytechnic Institute of Setúbal, School of Business and Administration, ESCE, Estefanilha, 2914-503 Setúbal, Portugal

² Institute Polytechnic of Setúbal, School of Business and Administration, ESCE, Portugal & CEFAGE, University of Évora, Portugal

³ Polytechnic Institute of Setúbal, School of Business and Administration, ESCE, Estefanilha, 2914-503 Setúbal, Portugal

1. INTRODUCTION

The Covid-19 epidemic negatively affects global trade as well as social and cultural life, including tourism, trade in goods, production and sectors such as transport. Rating agencies such as Moody's and Standard & Poors have therefore reduced China's growth forecast for 2020. In line with all these negative effects, it seems inevitable that stock markets, economic growth and exchange rates have also been affected equally (Liu, Manzoor, Wang, Zhang and Manzoor, 2020).

Thus, the study aims to investigate the relationship between COVID-19 and the stock markets of Argentina, Brazil, Chile, Colombia, Peru, Mexico, in the period from July 2015 to June 2020. With the purpose of achieving such analysis, we intend to answer whether: i) the global pandemic (COVID-19) has increased synchronization in the financial markets under analysis? ii) if so, the persistence in yields could delimit the hypothesis of portfolio diversification? that is, we intend to test whether these financial markets have decreased their efficiency due to the pandemic outbreak. The results suggest that these regional markets show robust signs of in (efficiency), as well as very high levels of integration, which may jeopardize portfolio diversification.

This research adds two main contributions to the literature. The first contribution refers to the study of risk diversification in Latin American markets in the context of the COVID-19 outbreak pandemic. As far as we know, this is the first study that analyses these financial markets in isolation. However, there are recent studies that have analysed risk diversification, in the context of the global pandemic, namely the authors Liu, Manzoor, Wang, Zhang and Manzoor (2020) and Zeren & Hizarci (2020). However, the approach was quite different from that followed in this paper.

The second contribution is econometric in nature, as results are compared between econometric methods and mathematical models that have the possibility of evaluating correlations in the context of non-stationarity. In particular, the test of Gregory & Hansen (1996) which demonstrates the presence of integration between financial markets with breaks in structures and, in a complementary manner to the Detrended Fluctuation Analysis (DFA) methodology, which will assess the presence or otherwise of long memories in these stock indices and test whether these markets are efficient, in their weak form.

In terms of structure, this test is organised into 5 sections. In addition to the current introduction, Section 2 presents an analysis of the Literature Review regarding articles on the assumption of efficiency in its weak form in financial markets, Section 3 describes the methodology and data, Section 4 contains the results. Section 5 presents the general conclusions of the work.

2. LITERATURE REVIEW

The subject of the efficient market hypothesis (EMH) has motivated several studies to analyse the implications of the market efficiency hypothesis, according to which the current price of assets reflects all available information at a given moment and the price adjusts quickly as new and unforeseen information reaches the market. The inversion to the average hypothesis, also called negative series correlation, has been interpreted as an efficient correction mechanism in developed markets and, a sign of speculative bubble in emerging financial markets (Fama and French, 1988).

Different studies have analysed the issue of market efficiency, examining the assumption of predictability of returns, through the analysis of the average reversal in financial market prices (Fama and French, 1988). When the assumptions of random walk and information efficiency are rejected,

they cause extreme commotions in stock prices. The occurrence of these phenomena may eventually diminish the implementation of efficient portfolio diversification strategies (Malafeyev, Awasthi, S.Kambekar and Kupinskaya, 2019; Sadat and Hasan, 2019).

Sierra Suárez, Duarte Duarte and Mascareñas Pérez-Iñigo (2013), Worthington and Higgs (2013) Brazil, Chile, Colombia, Mexico, Peru and Venezuela are examined for random walks using serial correlation coefficient and runs tests, Augmented Dickey-Fuller (ADF, Duarte and Mascareñas Pérez-Iñigo (2014), Ruiz-Porras and Ruiz-Robles (2015) studied the efficiency of the markets, in their weak form, in Latin America. Sierra Suárez, Duarte Duarte and Mascareñas Pérez-Iñigo (2013) evidence that the Colombian market shows signs of inefficiency, in its weak form, showing some predictability in returns based on historical data. Worthington and Higgs (2013) Brazil, Chile, Colombia, Mexico, Peru and Venezuela are examined for random walks using serial correlation coefficient and runs tests, Augmented Dickey-Fuller (ADF analysed the financial markets of Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela, showing that the efficient market hypothesis is rejected. Duarte and Mascareñas Pérez-Iñigo (2014) analysed the top 5 financial markets in Latin America from January 2002 to August 2012. The authors show that the five main Latin American economies have undergone a shift from non-efficiency to efficiency in recent years, according to the following chronological order: Mexico (2007), Brazil (2008), Colombia (2008), Chile (2011) and Peru (2012). Ruiz-Porras and Ruiz-Robles (2015) analysed the return of the Mexican shares, in the period 2000-2012. The main results suggest that the Mexican stock market is inefficient in its weak form, and this efficiency has decreased since 2007.

More recently, Malafeyev, Awasthi, S.Kambekar and Kupinskaya (2019), Caporale, Gil-Alana and Poza (2020)i.e., the difference between the two logged series. Specifically, monthly, weekly and daily data on the following five European stock market indices are analysed: DAX30 (Germany, Milos, Hatiegan, Milos, Barna and Botoc (2020) have tested efficiency in several markets. Malafeyev, Awasthi, S.Kambekar and Kupinskaya (2019) studied the stock markets of China and India, showing that these stock markets do not show market efficiency in their weak form. Already Caporale, Gil-Alana and Poza (2020)i.e., the difference between the two logged series. Specifically, monthly, weekly and daily data on the following five European stock market indices are analysed: DAX30 (Germany analysed five European stock market indices: DAX30 (Germany), FTSE100 (United Kingdom), CAC40 (France), FTSE MIB40 (Italy) and IBEX35 (Spain), highlighting the presence of long memories, which could jeopardise market efficiency in its weak form. Milos, Hatiegan, Milos, Barna and Botoc (2020) examined seven stock markets in Central and Eastern Europe. The authors showed that the returns presented long-term correlations, supporting the idea that the stock markets in question were not efficient, nor had they reached the mature stage of market development.

In summary, this work aims to contribute to the provision of information to investors and regulators in international stock markets, where individual and institutional investors seek diversification benefits, as well as to help promote the implementation of policies that contribute to the efficiency of markets, in their weak form, in the context of the global pandemic (COVID-19).

3. METHODOLOGY

3.1. Data

The closing price data for the financial markets of Argentina, Brazil, Chile, Colombia, Peru and Mexico were obtained from the Thomson Reuters platform. The quotations are daily and com-

prise the period from 1 July 2015 to 29 June 2020 and were split into two sub-periods pre and during Covid-19. Quotations are in local currency to mitigate exchange rate distortions.

Table 1. The name of countries and their indices used in this paper

Country / Region name	Index
Argentina / América Latina	MERVAL
Brazil / América Latina	BOVESPA
Chile / América Latina	IPSA
Colombia / América Latina	COLCAP
Peru / América Latina	BVLAC
Mexico / América Latina	BOLSAA.MX

Source: Own elaboration

3.2. Methodology

The development of research has taken place in several stages. The characterization of the sample used was carried out using descriptive statistics. With the purpose of verifying the integration or segmentation of financial market indices in Latin America, we used the methodology of Gregory and Hansen (1996), because we're looking at a very troubled period in the financial markets. Although Hurst's exponent will not be used directly, a methodology will be applied that indirectly proposes the same information: Detrended Fluctuation Analysis (DFA). DFA is a method of analysis that examines time dependency in non-stationary data series. This technique by assuming that the time series are non-stationary avoids spurious results when the analysis focuses on the relationships of the data series in the long run. DFA has the following interpretation: $0 < \alpha < 0.5$: anti persistent series; $\alpha = 0.5$ series presents random walk; $0.5 < \alpha < 1$ persistent series.

4. RESULTS

Figure 1 shows the evolution of the markets, in first differences, under analysis. The sample comprises the time span from July 1, 2015 to June 29, 2020, which is a very complex period due to the understanding of the outbreak of the global pandemic (COVID-19). The yields clearly reveal the instability experienced in these markets in February, March and April.

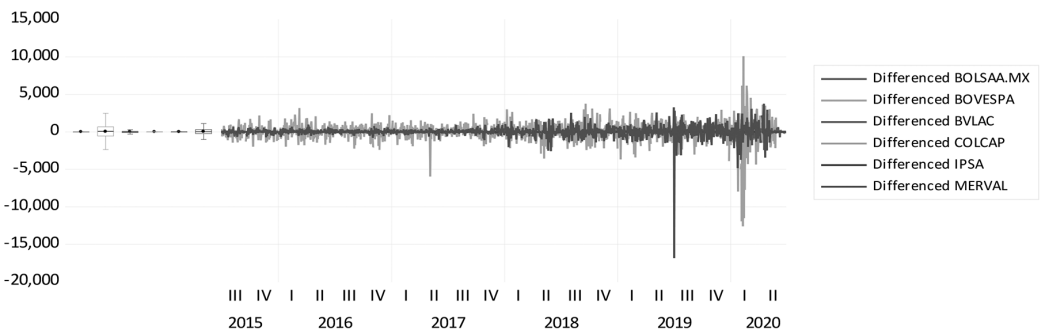


Figure 1. First differences in the evolution of the 6 financial markets in the full period
Source: Own elaboration

Table 2 shows the main descriptive statistics of the financial markets under analysis. The analysis of the descriptive statistics allows us to gauge that most of the returns have positive daily aver-

ages, except for the stock market indices of Colombia, Chile. The asymmetry characteristics are negative, except for the Mexican market. On the other hand, all the series of returns showed signs of deviation from the hypothesis of normality, given the coefficients of asymmetry and kurtosis. In the case of a normal distribution, the asymmetry coefficient takes the value zero and the kurtosis coefficient the value three. The analysed series are leptocurricular and have asymmetric tabs, so they do not follow a normal distribution.

Table 2. Descriptive statistics, return, of the 6 financial markets in the full period

Index	N	Mean	Skewness	Kurtosis
BOLSAA.MX	1256	0,000341	0,7382	11,7366
BOVESPA	1256	0,000485	-1,27211	16,46721
IPSA	1256	-9,8E-05	-2,81171	47,80726
COLCAP	1256	-0,00035	-2,10251	49,04115
MERVAL	1256	0,000986	-4,30549	70,90799
BVLAC	1256	0,000184	-0,98772	17,92709

Source: Own elaboration

Table 3 shows the results of the Gregory-Hansen test (1996), and easily detects 20 integrated market pairs (out of 30 possible) in the pre-Covid period. The Peruvian market shows 5 integrations (out of 5 possible). The Brazilian market shows 4 integrations, while the Argentina, Chile and Mexico markets show 3 integrations, the Mexican market shows 2 integrations. In the Covid period the levels of integration between the Latin American markets oscillated (23 out of 30 possible). The Chilean and Mexican markets rose to 5 integrations, Brazil maintained (4 integrations). The Peruvian market fell to 4 integrations, while the Colombian and Argentinean markets showed 3 and 2 integrations, respectively. In addition, we note that the breakdown of the structure is mostly in March 2020. These results are in line with the authors' studies Caporale, Gil-Alana & Poza (2020), Milos, Hatiegan, Milos, Barna & Botoc (2020), which show high levels of integration in the stock markets, which calls into question the diversification of portfolios in these regional markets. These evidences have important implications for individual and international investors, portfolio managers and policy makers.

Table 3. Gregory-Hansen tests, Covid period

Markets	t-statistic	Method	Lags	Break Date	Results
BOLSAA.MX / BOVESPA	-5.41**	Trend	0	09/03/2020	Integration
BOLSAA.MX / IPSA	-4.98**	Trend	0	09/03/2020	Integration
BOLSAA.MX / COLCAP	-5.32**	Trend	3	09/03/2020	Integration
BOLSAA.MX / MERVAL	-5.04***	Trend	0	09/03/2020	Integration
BOLSAA.MX / BVLAC	-5.20**	Trend	5	17/04/2020	Integration
BOVESPA / BOLSAA.MX	-5.00**	Trend	0	31/01/2020	Integration
BOVESPA / IPSA	-5.47***	Trend	0	31/01/2020	Integration
BOVESPA / COLCAP	-5.67***	Trend	0	31/01/2020	Integration
BOVESPA / MERVAL	-5.67***	Trend	0	06/02/2020	Integration
BVLAC / BOLSAA.MX	-5.03**	Regime	0	05/03/2020	Integration
BVLAC / BOVESPA	-5.20**	Regime	4	10/03/2020	Integration
BVLAC / COLCAP	-5.35**	Regime	2	05/03/2020	Integration
BVLAC / IPSA	-4.78*	Regime	3	05/03/2020	Integration
IPSA / BOLSAA.MX	-5,72***	Trend	0	12/05/2020	Integration

Markets	t-statistic	Method	Lags	Break Date	Results
IPSA / BOVESPA	-6.28***	Trend	0	12/05/2020	Integration
IPSA / COLCAP	-5.04**	Trend	0	12/05/2020	Integration
IPSA / Merval	-5.18**	Trend	2	04/05/2020	Integration
IPSA / BVLAC	-5.33**	Trend	3	12/05/2020	Integration
COLCAP / BOVESPA	-6.32***	Trend	3	15/01/2020	Integration
COLCAP / IPSA	-5.60***	Trend	3	15/01/2020	Integration
COLCAP / Merval	-5.44**	Trend	1	11/03/2020	Integration
Merval / COLCAP	-6.51***	Trend	0	11/03/2020	Integration
Merval / BVLAC	-6.44***	Trend	0	23/01/2020	Integration

Source: Own elaboration

Notes: The critical values are found in Gregory and Hansen (1996). The asterisks ***, **, * indicate statistical significance at 1%, 5% and 10%, respectively

In table 4 we can see the results of the DFA exponents, in both subperiods. We verified that during the pre-Covid period, the Peruvian market presents persistence, suggesting signs of inefficiency (long memories), while the Argentinean market presents anti persistence, and the remaining markets show an equilibrium trend. In addition, we found that during the COVID period the Chilean and Colombia markets show very significant signs of inefficiency, with moderate signs in Argentina, Brazil and Peru. Additionally, we can see that the Mexican market shows signs of anti-persistence. These results are in line with the authors' evidence Aggarwal (2018), Rehman, Chhapra, Kashif and Rehan (2018), Malafeyev, Awasthi, S.Kambekar and Kupinskaya (2019), which document that markets are (in) efficient in their weak form and that portfolio diversification may be questioned.

Table 4. DFA results. The hypotheses are $H_0: \alpha = 0.5$ and $H_1: \alpha \neq 0.5$

Stock market	DFA exponent (before crisis)	DFA exponent (crisis period)
BOLSAA.MX	0.49 ± 0.0033 ($R^2 = 0.99$)	0.39 ± 0.0210 ($R^2 = 0.97$)
BOVESPA	0.49 ± 0.0044 ($R^2 = 0.99$)	0.53 ± 0.0248 ($R^2 = 0.99$)
BVLAC	0.55 ± 0.0010 ($R^2 = 0.99$)	0.54 ± 0.0131 ($R^2 = 0.98$)
COLCAP	0.52 ± 0.0015 ($R^2 = 0.99$)	0.74 ± 0.0003 ($R^2 = 0.99$)
IPSA	0.51 ± 0.0065 ($R^2 = 0.99$)	0.64 ± 0.0127 ($R^2 = 0.98$)
Merval	0.41 ± 0.0022 ($R^2 = 0.97$)	0.54 ± 0.0050 ($R^2 = 0.99$)

Source: Own elaboration

5. CONCLUSION

The general conclusion to be retained and, supported by the results obtained, through tests performed with econometric models, demonstrates that the global pandemic has a significant impact on the memory properties of financial market indices in Latin America. We found that the level of financial integration is very significant in these markets, calling into question the implementation of efficient portfolio diversification strategies. These markets also prove to be inefficient in their weak form due to the high levels of arbitrage identified. In conclusion, we consider that these evidences are relevant for policy makers and investors in relation to regional development policies and portfolio diversification strategies in these regional markets.

REFERENCES

- Aggarwal, D. (2018). Random walk model and asymmetric effect in Korean composite stock price index. *Afro-Asian J. of Finance and Accounting*. <https://doi.org/10.1504/aaifa.2018.10009906>
- Caporale, G. M., Gil-Alana, L. A., & Poza, C. (2020). High and low prices and the range in the European stock markets: A long-memory approach. *Research in International Business and Finance*. <https://doi.org/10.1016/j.ribaf.2019.101126>
- Duarte Duarte, J. B., & Mascareñas Pérez-Iñigo, J. M. (2014). Comprobación de la eficiencia débil en los principales mercados financieros latinoamericanos. *Estudios Gerenciales*. <https://doi.org/10.1016/j.estger.2014.05.005>
- Fama, E. F., & French, K. R. (1988). Dividend yields and expected stock returns. *Journal of Financial Economics*. [https://doi.org/10.1016/0304-405X\(88\)90020-7](https://doi.org/10.1016/0304-405X(88)90020-7)
- Gregory, A. W., & Hansen, B. E. (1996). Residual-based tests for cointegration in models with regime shifts. *Journal of Econometrics*, 70(1), 99–126. [https://doi.org/10.1016/0304-4076\(99\)00168-7](https://doi.org/10.1016/0304-4076(99)00168-7)
- Lawrence H. Summers. (1986). Does the stock market rationally reflect fundamental values. *The Journal of Finance*. <https://doi.org/10.2307/2328487>
- Liu, H., Manzoor, A., Wang, C., Zhang, L., & Manzoor, Z. (2020). The COVID-19 outbreak and affected countries stock markets response. *International Journal of Environmental Research and Public Health*. <https://doi.org/10.3390/ijerph17082800>
- Malafeyev, O., Awasthi, A., S.Kambekar, K., & Kupinskaya, A. (2019). Random Walks and Market Efficiency in Chinese and Indian Equity Markets. *Statistics, Optimization & Information Computing*. <https://doi.org/10.19139/soic.v7i1.499>
- Milos, L. R., Hatiegan, C., Milos, M. C., Barna, F. M., & Botoc, C. (2020). Multifractal detrended fluctuation analysis (MF-DFA) of stock market indexes. Empirical evidence from seven central and eastern European markets. *Sustainability (Switzerland)*. <https://doi.org/10.3390/su12020535>
- Rehman, S., Chhapra, I. U., Kashif, M., & Rehan, R. (2018). Are Stock Prices a Random Walk? An Empirical Evidence of Asian Stock Markets. *Etikonomi*. <https://doi.org/10.15408/etk.v17i2.7102>
- Ruiz-Porras, A., & Ruiz-Robles, B. (2015). La hipótesis de eficiencia y la modelación de series bursátiles mexicanas: un análisis multivariado. *Economía Informa*. [https://doi.org/10.1016/s0185-0849\(15\)30003-7](https://doi.org/10.1016/s0185-0849(15)30003-7)
- Sierra Suárez, K. J., Duarte Duarte, J. B., & Mascareñas Pérez-Iñigo, J. M. (2013). Comprobación del Comportamiento Caótico en Bolsa de Valores de Colombia. *Revista Estrategia Organizacional*. <https://doi.org/10.22490/25392786.1480>
- Worthington, A. C., & Higgs, H. (2013). Tests of random walks and market efficiency in Latin American stock markets: An empirical note. *Pathogens and Global Health*. <https://doi.org/10.1179/20477213X13869290853977>
- Zeren, F., & Hizarci, A. (2020). The Impact of Covid-19 Coronavirus on Stock Markets: Evidence from Selected Countries. *Muhasebe ve Finans İncelemeleri Dergisi*. <https://doi.org/10.32951/mufider.706159>

TEN YEARS STUDENT SATISFACTION TRENDS ON THE QUALITY OF EDUCATIONAL PROCESS

Koviljka Banjević¹ 
Dragana Gardašević² 
Aleksandra Nastasić³ 

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Abstract: *The success of the Higher Education Institution (HEI) mostly depends on student satisfaction, as satisfied students are the basis of institutional existence, its growth and development. The previous does not mean diminishing other institutional performance factors, but the final goal of all processes is to retain existing students and attract freshmen through continual improvement of student satisfaction. The main objective of this paper is to analyse critically the results of measuring student satisfaction in the College of Professional Studies – Belgrade Polytechnic, in relation to the actions taken to improve the educational process. The study included 56 variables of the educational process and non-teaching support, and until now sample was comprised of 3275 undergraduates. For this paper, the variables of the educational process are separated, and the impact of improvements on student satisfaction is analysed by using appropriate statistical tools. The conclusions of this study may contribute to previous, actual and/or future researches in this field, and may equally serve to other HEIs (that operate in a similar environment) as a basis for enhancing student satisfaction.*

Keywords: *Higher education, Assessment, Improvements.*

JEL Classification I23

✉ kbanjevic@politehnika.edu.rs

¹ College of Professional Studies - Belgrade Polytechnic, Katarine Ambrozić 3, Zvezdara, Belgrade, Serbia

² College of Professional Studies - Belgrade Polytechnic, Katarine Ambrozić 3, Zvezdara, Belgrade, Serbia

³ College of Professional Studies - Belgrade Polytechnic, Katarine Ambrozić 3, Zvezdara, Belgrade, Serbia

1. INTRODUCTION

Over the last decades, the European HE systems were faced with the number of challenges. Consequently, many of European countries implemented the concept of “New Public Management” that implied to transition on the market-based principles. For many HE systems, the new context meant the introduction of the quality management principles – outputs evaluation in relation to inputs; performance appraisal; quality assurance; and external audit (Van Ameijde, Nelson, Billsberry, & Van Meurs, 2009; Lynch, 2014; Banjević, Nastasić, & Rošulj, 2019). In the moment of joining Bologna Process, Serbian Government set up the “new” national regulations, in general, based on the quality management principles.

Increasingly, HEIs have perceived that HE could be regarded as a business-like service industry, and they are beginning to focus more on meeting and exceeding the needs and expectations of their students (Gruber, Fuß, Voss, & Gläser-Zikuda, 2010). Therefore, the HEIs shall monitor, measure and analyse student satisfaction to proactively improve all aspects of HE quality (Harvey, 1995; Aldridge & Rowley, 1998; Douglas & Douglas, 2006, p. 6), student wellbeing, institutional image and performance (James et al., 1999). Student satisfaction is a personal, subjective, short-term, overall attitude resulting from the students’ evaluation of educational experience, services and facilities (Athiyaman, 1997; Elliott & Healy, 2001; Marzo-Navarro et al., 2005; Weerasinghe, Lalitha & Fernando, 2017). As a complex and multi-dimensional (Hartman & Schmidt, 1995), student satisfaction effects on students’ commitment, loyalty, academic performances, enrolment and retention (Athiyaman, 1997; Elliott & Healy, 2001; Helgesen & Nettet, 2007; Nastasić, Banjević, Gardašević, 2019). Student satisfaction is dynamic and based not only on service quality perceptions, but also on personal and situational factors and price (Zeithaml et al., 2008; Gruber, Fuß, Voss, & Gläser-Zikuda, 2010).

Taking into account the new circumstances in European and national HE area, in 2002 the Belgrade Polytechnic began the process of establishing Quality Management System (QMS). The system according to ISO 9001:2008 was implemented in 2009, and certified by Management Systems Certification Bodies – YUQS and IQNet. The recertification in accordance with SRPS ISO 9001:2015 was done in 2018. Regarding other documented processes, the established QMS involved a continual appraisal of institutional performance indicators, including measuring student satisfaction with the quality of the institution. The institutional quality parameters were defined according to national standards for self-evaluation, established QMS, and experiences of other national and European HEIs. In this sense, the process of evaluation of the student satisfaction with the quality of institution involves the measuring of 13 parameters that are classified in the two clusters – educational process and non-teaching support.

Considering the amount of data that were obtained until now, this paper presents the study based on a survey of undergraduate student satisfaction with the educational process during the ten-year period (2008/2009-2018/2019) at the Belgrade Polytechnic. The data were collected annually until the 2013/2014 academic year, and after that every second year. The individual satisfaction questions were grouped into three parameters affecting overall satisfaction with the educational process – study programme, teaching process and teaching staff. Each of these parameters consists of several variables that analyse it in detail. Additionally, the paper shows trends on student satisfaction in relation to implemented improvement actions during the observed period.

2. ANALYSIS OF STUDENT SATISFACTION WITH EDUCATIONAL PROCESS

2.1. Methodology and reliability statistics

The survey strategy was based on quantitative and qualitative methods. In assessing student satisfaction with 16 variables of the educational process, a five-point Likert scale was used, ranging from 1 (“Dissatisfied”) to 5 (“Extremely satisfied”). This bipolar scaling method measured either positive or negative response to a statement. In addition, the survey included items related to respondents’ demographics, such as the year of evaluation, study programme, the year of study. The survey was sent to all senior students having 48 or more credits hours, i.e. to all undergraduate students of the second and third year of study. The study gathered 3,275 respondents during the 2008/2009-2018/2019 period. Overall, the response rates ranged from 17,47% (in the 2011/2012) and 47,18% (in the 2008/2009) for the ten-year period (Table 1).

Table 1. The amount of sample size per academic year

Academic year	Population	Sample size	%	Sample size needed for 95% confidence level and 5 CI	CI (Confidence interval)
2008/2009	2090	986	47,18	325	2,27
2009/2010	1256	368	29,30	294	4,30
2010/2011	1437	387	36,93	303	4,27
2011/2012	2186	382	17,47	327	4,56
2012/2013	1391	406	29,21	301	4,09
2013/2014	1377	305	22,15	301	4,95
2015/2016	452	211	46,68	208	4,93
2018/2019	731	230	31,46	252	5,35

Source: Authors

The changes in population size were consequences of modification in defining target groups – in terms of the studying year, and change in the number of enrolled students. As the survey was carried out every year, respectively every second year, a certain number of students assessed their satisfaction more than once. This approach enables the monitoring of student satisfaction after the implementation of improvement actions.

The analysis included descriptive statistics, a comparison of the measures of central tendency and satisfaction trends on the parameters of educational process, as well as research into the correlation of satisfaction scores with the relevant parameters that describe the educational process (over the years).

Table 2. Reliability Statistics

Parameter of the educational process	Cronbach’s Alpha	Cronbach’s Alpha Based on Standardized Items	N of Items
Studying programme	,794	,796	4
Teaching Process	,843	,843	8
Teaching Staff	,770	,773	3

Source: Authors

The variables for each parameter were tested for internal consistency using the Cronbach's alpha reliability coefficient (Table 2):

The measured coefficients range from 0,77 to 0,84, so we conclude that good reliability of the measuring scale is fulfilled (Henson, 2001). The highest reliability of the measuring scale is among the variables of the "Teaching Process" parameter ($\alpha = 0,84$), while the lowest is among the variables describing the "Teaching Staff" parameter ($\alpha = 0,77$).

2.2. Results Analysis

To consider the impact of introduced improvements, trend lines were created for the parameters of educational process. Figure 1 refers to a positive trend in all three cases, with Pearson's coefficient of correlation 0,82, 0,81, 0,88, respectively, showing the strong positive correlation between parameters of educational process and actions introduced in each academic year.

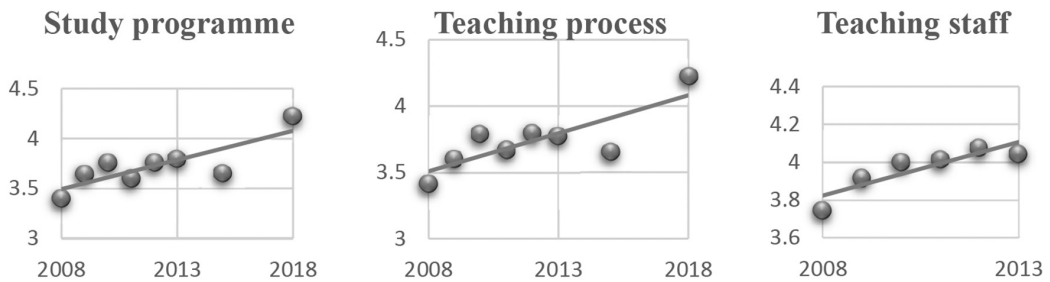


Figure 1. Trend lines for the parameters of educational process

Source: Authors

The improvement actions (Table 3) were introduced between every two evaluation cycles, therefore the satisfaction rating was also based on those implemented actions. The third column (Table 3) refers to depended variable for which action was introduced. Table 3 presents only distinctive improvements, it doesn't cover actions that carry out from time to time, such as development of new study programmes, academic staff development, improvement of library and equipment resources, etc.

Table 3. Introduced improvement actions

Academic year	The introduced improvement actions	Related to variable(s)
2008/2009	Measures related to academic staff in the cases of unrealized teacher activities	V14
2009/2010	The Physics and Metrology laboratory was established	V2, V11, V12
	The monitoring of lectures realisation	V14-16
	Improvement of the pre-entry tests in order to enhance the process of freshmen selection	V4
	Improvement of the student information service by introducing detailed course catalogue	V1, V7
	The Moodle Platform was implemented	V2-4

Academic year	The introduced improvement actions	Related to variable(s)
2010/2011	The specific software “Shoemaster Leathersgoods” at Department of Design was implemented	V3-4
	Improvement of the availability of e-educational materials	V4
	The process of selection of educational centres in business sector was formalised, and the collaboration among institution and organisations was enhanced	V3
	The student participation at conferences, exhibitions, and similar events	V2-3, V9, V11-13
	The evaluation of professional and pedagogical aspects of teacher works	V14-16
	The implementation of the system based on learning outcomes	V2-4
	Access to the national/international databases of e-publications (journals and books) for students and teachers	V4
2011/2012	Enhancement of evaluation of students' competences by introducing feedback from students and employers	V2-3, V11-12
	The trainings for the students with lower level of pre-education	V2-3
2012/2013	The process of annual reviewing and updating the contents of single courses	V2-4, V7-12
	The studio of leather design, laboratory of graphic engineering and the photo-studio were established	V2-4, V8-12
2013/2014	The Instructions for creating student vocational papers	V2-3
	The first agreements of international collaboration	V2-4
	The laboratory of work environment analyses was established	V2-4, V8-12
2014/2015	One more computer laboratory was established	V2-4, V8-12
	Enhancement the teaching methods by using video tutorials at several courses	V4
2015/2016	The first study visits for academic staff, to Program Countries, through Erasmus+ Project	V8-10, V16
	The training of academic staff related to strengthening the didactic skills	V14-16
2016/2017	Improvements of the teaching methods by applying adaptive technologies, and reversible design and engineering	V3-4, V8-13
	The blended learning at several courses	V2-4
	The study process was enhanced by introducing application “e-student”	V1
	The first study visits for students to Program Country through Erasmus+ project	V2-3, V11-12
2017/2018	The laboratory of waste analyses was established (supported by Erasmus+ project)	V2-4, V8-12
	Strengthening the teacher competences by international mobility program (Erasmus+ project KA107)	V4, V16
2018/2019	The students and teachers' mobility programmes through Erasmus + KA103 and KA107 projects	V2-4, V11-12, V16

Source: Documentation of the Belgrade Polytechnic

The implemented actions indicate commitment of the Belgrade Polytechnic to continual improvements. To analyse the effects of these improvements in detail the mean values for single variables were calculated (Table 4). Table presents mean values and the number of respondents (N) of the 10-year student satisfaction surveys with the quality of the educational process, sorted by academic year. Note that the mean values of some variables are missed, because they were changed, or removed, or added in the certain year.

Table 4. Mean of the variables of educational process

	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2015/ 2016	2018/ 2019
Variables of study programme (mean/ number of respondents)								
V1- Availability of information about the study programme	3,53	3,66	3,76	3,77	3,97	4,07	3,91	4,64
	971	364	385	377	402	304	211	257
V2-Acquiring general competences	3,45	3,69	3,83	3,67	3,86	3,86	3,67	4,08
	975	364	384	376	404	305	208	259
V3 -Acquiring professional competences	3,24	3,62	3,73	3,58	3,74	3,78	3,52	3,98
	967	365	381	374	401	305	209	263
V4 - Curriculum design	3,35	3,59	3,70	3,38	3,45	3,46	3,50	/
	965	365	383	375	397	303	208	/
Variables of teaching process (mean/ number of respondents)								
V5-Availability of timetable in timely manner	3,74	3,91	4,08	3,95	4,02	4,02	/	4,30
	972	366	384	278	402	305	/	257
V6-Fulfilment of student expectations with timetable	3,44	3,42	3,56	3,41	3,47	3,52	3,59	/
	968	364	383	378	404	305	211	/
V7- Availability of information about each course in timely manner	3,68	4,06	4,03	3,89	4,12	4,04	/	/
	964	365	383	377	404	303	/	/
V8 - Interactivity of lectures	3,38	3,65	3,82	3,76	3,84	3,87	3,78	4,36
	974	366	384	377	403	305	209	264
V9-Opportunity of creativity development	3,20	3,35	3,63	3,43	3,59	3,55	3,48	4,19
	968	367	382	377	402	305	206	258
V10- Examples from practice are good and illustrative	3,26	3,45	3,73	3,67	3,74	3,63	3,69	4,30
	959	365	383	375	404	305	208	260
V11-Teamwork skills development	3,24	3,40	3,61	3,61	3,71	3,65	3,73	4,05
	968	366	383	375	403	303	211	260
V12-Ability to perform tasks individually	3,34	3,56	3,83	3,72	3,86	3,89	3,87	4,42
	962	366	383	374	402	300	210	262
V13-Participation in professional and artistic projects within the study programme	/	/	/	/	/	/	3,22	3,84
	/	/	/	/	/	/	207	261

	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2015/ 2016	2018/ 2019
Variables of teaching staff (mean/ number of respondents)								
V14-Respect between teacher and students	3,89	4,10	4,15	4,14	4,21	4,15	/	/
	979	366	385	377	402	305	/	/
V15-Consistency in the realization of the course content	3,73	3,90	4,03	4,04	4,06	4,10	3,94	4,30
	977	365	383	376	402	304	209	261
V16- Teacher ability to present the course content	3,60	3,76	3,82	3,85	3,96	3,88	/	/
	978	365	384	375	403	304	/	/

Source: Authors

The students expressed the lowest level of satisfaction with single variables in the 2008/2009 academic year. In the following years, the levels of student satisfaction were gradually increased, except in the cases of the variables "Curriculum design" and "Fulfilment of student expectations with timetable". Besides taken improvement actions, there weren't significant differences in the mean values of "Curriculum design" during the 10 years. This could be explained by the fact that students had information about improvements but they didn't experience them. The characteristic of these improvements is in the time of introducing – before the beginning of lectures in the academic year. The students who attended the course weren't obligated to do it again, and a new generation of students didn't have previous experience with a course. However, the enhancements of satisfaction were noticed in other variables related to "Curriculum design", such as: "Acquiring general competences", "Acquiring professional competences", "Interactivity of lectures", "Opportunity of creativity development", "Teamwork skills development", "Ability to perform tasks individually".

Table 3 shows that there weren't any actions directed to variable "Fulfilment of student expectations with timetable", thus the obtained mean values of satisfaction were expected, i.e. there weren't significant differences among levels of satisfaction during the 10 years. The absence of improvements didn't mean that this variable was important, however it was a consequence of other limiting factors the Belgrade Polytechnic was faced with.

If we look at variables "Availability of information about the study programme" (V1) and "Availability of timetable in timely manner" (V5) there was only one action related to the first variable, but none in the second case. But the positive changes in the level of student satisfaction couldn't be negligible (V1 from M=3,53 to M=4,64; and V5 from M=3,74 to M=4,30). The Academic calendar, including timetable, as well as a detailed course catalogue, are always available at the same time – before beginning the academic year. The positive trends in student satisfaction with observed variables were probably the effect of changes in information services – from "paper" form to e-student.

The variables – "Interactivity of lectures", "Opportunity of creativity development", "Examples from practice are good and illustrative", "Teamwork skills development" and "Ability to perform tasks individually", refer to significant continual increase of the student satisfaction during the observed period (around one point between the first and last measuring). Since the 2010/2011 academic year, the improvement actions, which were directly or indirectly related to these variables, have been introduced. The mean values of student satisfaction with mentioned variables indicate that students perceived the introduced improvements.

While there were just a few actions that directly targeted variables of “Teaching staff” parameter (Table 3), the mean values (Table 4) indicate a slight increase in student satisfaction. As teaching staff was actively involved in the implementation of all considered actions, consequently, without direct intention, the variables related to this parameter were improved, and that had positive effect on student satisfaction.

To confirm the previous considerations, the correlation test among parameters of educational process was done (Table 5).

Table 5. Correlations among parameters of educational process

Control Parameters			Quality of the study programme	Quality of the teaching process	Quality of the teaching staff
The parameters of educational process	Quality of the study programme	Correlation	1,000	,716	,556
		Significance	.	,000	,000
		df	0	3246	3246
	Quality of the teaching process	Correlation	,716	1,000	,625
		Significance	,000	.	,000
		df	3246	0	3246
	Quality of the teaching staff	Correlation	,556	,625	1,000
		Significance	,000	,000	,000
		df	3246	3246	0
Correlation is significant at the 0.01 level (2-tailed)					

The partial correlation (Table 5) shows a positive moderate correlation among the parameters of educational process, within a range of 0,556-0,716. The greatest correlation is between the “Quality of study programme” and the “Quality of the teaching process” (positive strong, $r=0,716$), which means that a change of the satisfaction in one parameter will cause a modification of the satisfaction in other parameter in the same direction. On the other hand, the smallest correlation, yet positively moderate, is between the “Quality of the teaching staff” and the “Quality of the study programme” ($r=0,556$), in a way that the better quality of teaching staff implies a slight increase of student satisfaction with the quality of the study programme, and vice versa. The significance level of all results is at 0,01, which means that only 0,01 chances are presented that our expectations may not be accepted or rejected, i.e. there are 90% chances of our expectations to be accepted. Based on these results and considerations related to Table 4, we can assume that appropriate improvement of one variable of the educational process leads to an increase of satisfaction with the other two parameters.

CONCLUSION

Many authors have studied the field of student satisfaction, from different aspects and in relation to the numerous factors. The most of studies refer to the conclusion that variables of the educational process have a great impact on student satisfaction. A few things usually stand out: “The students are typically satisfied when they feel supported by their institution and experience a diverse and stimulating learning experience, that helps them advance their career goals (Global Student Satisfaction Report, 2019, p.10).”

The findings of our study show that the majority of the respondents were very satisfied with the proposed educational parameters. Moreover, the introduced improvements resulted in a positive trend of student satisfaction with parameters of educational process, regard to the observed ten-

year period. In this period, most of the variables had increasing value, up to one mark. Perhaps, the most important finding is related to positive (moderate to strong) correlation among the parameters of educational process. Detailed correlation and regression analysis with all variables of educational process could be the subject of some future research. Additionally, we collected the great amount of data that could be a good resource for the next studies, such as the impact of improvement action on single variables; the relationship between student satisfaction and other parameters; etc.

The presented results and improvement actions could be helpful for HEIs that operate in a similar environment like this one in Serbia.

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REFERENCES

- Aldridge, S. and Rowley, J. (1998). Measuring customer satisfaction in higher education. *Quality Assurance in Education*, 6(4), 197–204.
- Athiyaman, A. (1997). Linking Student Satisfaction and Service Quality Perceptions: The Case of University Education. *European Journal of Marketing*, 31(7), 528-540.
- Banjević, K., Nastasić, A., & Rošulj, D. (2019), Liderstvo u funkciji budućnosti visokoškolskih ustanova, *Information Technologies for e-Education*. Paper presented at XI International Scientific-Professional Conference ITEO 2019, Aperiion University, Banja Luka, December, 6.-7, 2019 (pp. 141-147). Banja Luka: Panevropski Univerzitet "Aperiion".
- Douglas, J. and Douglas, A. (2006), Evaluating teaching quality. *Quality in Higher Education*, 12(1), 3-12.
- Elliott, K. M. and Healy, M. A. (2001). Key Factors Influencing Student Satisfaction Related to Recruitment and Retention. *Journal of Marketing for Higher Education*, 10(4), 1-11.
- Global Student Satisfaction Awards, Student Satisfaction - A 2019 Global Overview, *Studyportals*, 2019, <https://studyportals.com/intelligence/global-student-satisfaction-2019/> p. 10.
- Gruber, T., Fuß, S., Voss, R. and Gläser-Zikuda, M. (2010), Examining student satisfaction with higher education services: Using a new measurement tool, *International Journal of Public Sector Management*, 23(2), 105-123. <https://doi.org/10.1108/09513551011022474>
- Hartman, D. E. and Schmidt, S. L. (1995). Understanding Student/Alumni Satisfaction from a Consumer's Perspective: The Effects of Institutional Performance and Program Outcomes. *Research in Higher Education*, 36(2), 197-217.
- Harvey, L. (1995). Student Satisfaction. *The New Review of Academic Librarianship*, 1, 161-173.
- Helgesen, Ø. and Nettet, E. (2007). Images, Satisfaction and Antecedents: Drivers of Student Loyalty? A Case Study of a Norwegian University College. *Corporate Reputation Review*, 10, 38–59. doi: 10.1057/palgrave.crr.1550037
- Henson, R. K. (2001). Understanding internal consistency reliability estimates: A conceptual primer on coefficient alpha. *Measurement and Evaluation in Counselling and Development*, 34, 177-189.
- James, R., Baldwin, G. & McInnis, C. (1999). Which University? The Factors Influencing the Choices of Prospective Undergraduates. Melbourne: University of Melbourne, Centre for the Study of Higher Education.
- Lynch, K. (In Press) "New managerialism" in education: the organisational form of neoliberalism, *Open Democracy*. <https://www.opendemocracy.net/en/new-managerialism-in-education-organisational-form-of-neoliberalism/>

- Marzo-Navarro, M., Iglesias, M. P. & Torres, P. R. (2005). Measuring Customer Satisfaction in Summer Courses. *Quality Assurance in Education*, 13(1), 53-65.
- Nastasić, A., Banjević, K., Gardašević, D. (2019). Student Satisfaction as a Performance Indicator of Higher Education Institution. *Journal of Innovative Business and Management*, 11(2), 67-76. DOI: 10.32015/JIBM/2019-11-2-8.
- Van Ameijde, D. J. J., Nelson, C. P., Billsberry, J., & Van Meurs, N. (2009), Improving Leadership in Higher Education Institutions: A Distributed Perspective. *Higher Education*, 58(6), 763-779.
- Weerasinghe, I. S., Lalitha, R., & Fernando, S. (2017). Students' Satisfaction in Higher Education Literature Review. *American Journal of Educational Research*, 5(5), 533-539.
- Zeithaml, V. A., M. J. Bitner, & D. D. Gremler (2008), *Services Marketing – Integrating Customer Focus Across the Firm*, 5th Edition. Boston: McGraw Hill.

ADDITIONAL READING

Regulation on standards for self-evaluation and quality assessment of higher education institutions and study program. *National Entity for Accreditation and Quality Assurance in Higher Education in Serbia – NEAQA*, <https://www.nat.rs/en/self-evaluation/>

THE ROLE OF AGILE SOFTWARE ARCHITECT IN THE AGE OF DIGITAL DISRUPTION AND TRANSFORMATION

Zoran Dragičević¹ 
Saša Bošnjak² 

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Abstract: *The consequence of the increasing development and use of digital technologies, in every segment of society, is the emergence of digital disruption - a powerful external pressure that is changing the way business is done in all industries. Businesses are responding to digital disruption by digital transformation, which involves organizational change, redefining and aligning digital and business strategies, new business models, increased agility of software development and delivery processes, migration and/or integration of legacy systems using cloud-based platforms and ecosystems. In such a context, one of the key responsibilities of a software architect is to maintain the agility of the organization by defending the flexibility of digital strategy and IT resources so that the enterprise is able to transform and respond adequately and rapidly to the effects of digital disruption. In this regard, the question arises as to how digital disruption and business transformation affect the change in the role, importance, competence and agility of a software architect, especially in the context of the development of complex business software systems. This paper aims to present the role of an agile software architect in the era of digital disruption and transformation, by integrating the results of theoretical and empirical research. A systematic literature review identifies the role, importance, and competencies of a software architect in implementing agile architecture. In other hand, empirical research, based on a case study in a large enterprise, provides a better understanding of the importance of software architect for aligning business and digital strategy, as well as its contribution to increasing the agility of the process of developing, delivering and integrating complex business software systems.*

Keywords: *Agility, Agile software architect, Digital disruption, Digital transformation.*

JEL Classification L86

✉ zoran.dragicevic021@gmail.com

¹ Kompanija Boksit a.d. Milići, RS, Bosnia & Herzegovina

² University of Novi Sad, Faculty of Economics in Subotica, Serbia

1. INTRODUCTION

Digital innovations based on digital technologies have led to the emergence of digital disruption - a powerful external pressure on organizations in all industries, which threatens their competitive positions by systematically influencing value creation, disruption, and recombination of the value chain and links between resources, but at the same time facilitates direct interaction and transactions (Skog *et al.*, 2018). Highly innovative technology organizations, referred to as digital disruptors, identify customer needs, create and deliver value to customers at lower costs, using open source tools and platforms, with faster development times and greater impact on user experience than anything seen before (McQuivey, 2013). Accordingly, Baiyere & Hukal (2020) define digital disruption as “*the alteration of a domain-specific paradigm due to the digital attributes of an innovation*”.

Faced with such challenges, organizations are undertaking digital transformation initiatives by questioning the wishes and needs of clients, and operational models, where they use the new possibilities to increase competitiveness in order to transform the value proposition to the customers and/or reconfigure the operational models (Berman, 2012). Digital transformation is the response of organizations to the effects of digital disruption, which involves redefining and aligning digital and business strategies, organizational changes, new business models, increasing the agility of development and delivery of software solutions, migration and/or integration of existing systems using cloud-based platforms and ecosystems. Thus, Westerman *et al.* (2011) define digital transformation as “*the use of technology to radically improve performance or reach of enterprises*”, while Liere-Netheler *et al.* (2018) define digital transformation in a broader context as „*metamorphosis that is based on the intensive combination of present and future technologies that will change the paradigm of how value-generating processes in and between enterprises as well as with customers take place. Digital transformation will affect business models and corporate strategies*“.

In order to survive in a contemporary ever-changing environment, organizations must be adaptable, collaborative, agile, innovative, and without fear of failure. While more and more organizations are embracing new agile principles such as creating incredible conditions, security as a prerequisite, experimenting and learning quickly and constantly gaining value, there is a lack of flexibility, especially in preserving the long-term ability of organizations to adapt and change in response to digital disruption (Prikladnicki *et al.*, 2017). Although the agile movement has had a tremendous impact on changing modes, some agile aspects have become dogmatic, which has slowed the spread of agile principles to some more complex software development contexts. On the other hand, the increasing need for speed and availability has led to technological expansion, characterized by the development of clouds, DevOps / CD movements and software ecosystems, which also creates new needs for process and project management (Kruchten, 2019), whereby technology alone cannot eliminate the root causes of failure to adopt agile principles and processes, such as misunderstanding of contexts, communication barriers, or poor collaboration, as these activities cannot be automated (Ozkaya, 2019).

With all this in mind, it seems that an agile software architect has an increasing potential to become a key factor in enhancing agility and defending the flexibility of digital strategy and IT resources so that an organization is able to transform and adequately respond to the effects of digital disruption launching digital transformation initiatives or becoming a digital disruptor on its own through digital innovation. In this connection, the question is how digital disruption and business transformation affect the change in the role, importance, competencies and agility of a software architect, especially in the context of agile development of complex business software systems. This paper aims to determine the importance and role, responsibilities and competencies of an agile software architect in the era of digital disruption and transformation.

The rest of the paper is structured as follows: Chapter 2 describes the methodology of theoretical and empirical research. Chapter 3 presents the results of a systematic literature review and a case study of a large enterprise. Chapter 4 discusses the results, answers the research question, and compares the results of similar research, with the limitations of the research outlined. Chapter 5 identifies emerging trends and future research directions, while Chapter 6 provides concluding considerations, implications, and suggestions for further research.

2. METHODOLOGY

The theoretical part of the research starts from the results of research into the trends, challenges, success factors and practices of agile architecture in the digital era (Dragičević & Bošnjak, 2019a) and represents its logical extension. It was implemented using the Systematic Literature Review (SLR) methods and guidelines of Kitchenham (2007). The SLR protocol aims to identify the key roles, responsibilities and competencies of the software architect in implementing agile architecture. A next query was applied to the automatic search process: (*agile OR lean OR evolutionary OR continuous*) *AND architect* AND software AND development*, for database search IEEE Xplore, ArXiv, ACM (*title or abstract*), that is, a query *allintitle:"agile architecture" OR „continuous architecture" OR „lean architecture" OR „evolutionary software architecture"* for Google Scholar. Based on the inclusion criteria, papers were selected that define or discuss the role of the software architect in implementing Agile, Continuous, Lean, or Evolutionary architecture, 2009-2019. Non-primary studies, not published in journals or conferences, not related to the research objective, or merely mentioning terms in the query are excluded. Selected papers, after eliminating duplicates, undergo quality assessment criteria, defined by the recommendations of Kitchenham (2007) and Dybå & Dingsøyr (2008). Snowballing was used for manual search (Webster & Watson, 2002; Jalali & Wohlin, 2012). The results of the selection and quality assessment of the papers are given in Table 1. Coding and thematic analysis techniques were used for the extraction of data, qualitative analysis and data synthesis.

Table 1. Search and selection results

Criteria	IEEE Xplore	ACM	ArXiv	Google Scholar
After a search by queries	915	973	47	173
Selected on the basis of title and/or abstract	31	12	3	10
After removing duplicates and quality assessment	19	4	1	4
Added after manual search (snowballing)	5			
Total:	33			

Source: Authors

The empirical part of the research was realized at Kompanija Boksit a.d. Milići (hereafter Boksit), based on the case of the development of a complex software system, as a logical continuation of previously realized research in a given context (Dragičević & Bošnjak, 2019b, 2019c). The case study aimed to evaluate the results of the theoretical part of the research with a better understanding of the importance of software architect for aligning business and digital strategy, as well as its contribution to increasing the agility of the process of development and integration of complex business software systems. In the data collection process, a semi-structured interview with one of the authors was used, who in various roles, including the role of the software architect, was in charge of defining and operationalizing the business and digital strategy (Dragičević & Bošnjak, 2019b, 2019c). Key case study research questions were based on SLR results to empirically val-

idate them through exploring the role of software architect in Boksit, given the broader context, business vision and strategy, as well as organizational, architectural, methodological and infrastructure aspects of the software development and delivery process. A qualitative approach was used to analyze the data because it supports a more detailed description of the observed phenomenon and better insight into the complex processes (Eisenhardt & Graebner, 2007). To reduce the risk of bias, the study was conducted by two authors.

3. FINDINGS

This part of the paper first presents the results of the theoretical part of the research (SLR) and then the results of the case study.

A. SLR RESULTS

The first part of the SLR identified 5 key roles of an agile software architect: *Leader of change* (Business perspective), *Linking Element* (Organizational perspective), *Pragmatic Architect* (Architectural perspective), *Servant Leader & Facilitator* (Development perspective) and *Workflow & Traffic Enabler* (Operational perspective). Each role, and its associated perspective, is the result of coding, thematic analysis, and synthesis that defines the key responsibilities of an agile software architect (hereafter architect):

Leader of Change (Business perspective)

Understanding context, vision, and strategy: The architect strives to achieve measurable and realistic goals (Buschmann, 2012); focuses on stakeholder needs rather than plan or budget (Erder & Pureur, 2016); has a broad view, see other industries as a source of ideas (Erder & Pureur, 2016; Hohpe *et al.*, 2016); takes care of business, social and cultural aspects (Hohpe *et al.*, 2016); enables fundamental improvements in the organization's capabilities (Bass, 2017); sees architectural agility as a comparative advantage (Sturtevant, 2017); understands business goals, context & enable customization to context (Ozkaya, 2019).

Business and IT alignment: The architect continuously exchanges ideas with a wider group of people, from the very beginning (Blair *et al.*, 2010; Buschmann, 2012; Hadar & Sherman, 2012); think beyond structure and technology (Buschmann & Henney, 2013; Nord *et al.*, 2014); understands how the system will be used (Mirakhorli & Cleland-Huang, 2013); raises systemically important issues and balances opposing views (Woods, 2015); assesses architectural impact in economic terms: cost & business value (Martini & Bosch, 2016; Poort, 2016); acts quickly and facilitates decision making in an uncertain environment in collaboration with stakeholders (Erder & Pureur, 2016; Hohpe *et al.*, 2016).

Risk and time dimension management: The architect takes into account the temporal dimension of architecturally important events (Poort, 2016); assesses the architectural impact on risk (Martini & Bosch, 2016; Poort, 2016); assesses the technical risk of developing complex and critical systems (Waterman, 2018b); demonstrates the benefits of new technologies by designing an executable prototype (Erder & Pureur, 2016); understands that erosion of architecture can lead to technical bankruptcy (Sturtevant, 2017); understands and maps the essential characteristics of development process selection to the context (Ozkaya, 2019).

Linking Element (Organizational perspective)

Horizontal and vertical organization structuring: The architect deals with the organization structure (Nord *et al.*, 2014; Shahin *et al.*, 2019); connects parts of the organization horizontally and vertically (Hohpe *et al.*, 2016); builds bridges between and across different levels of organization (Hohpe *et al.*, 2016); considering highly skilled teams (Shahin *et al.*, 2019); architects in the organization must work better together, e.g. working as an “expert council” (Martensson *et al.*, 2019).

Organizing and coordinating teams: The Architect provides communication and avoids the “ivory-tower” trap (Blair *et al.*, 2010; Faber, 2010; Erder & Pureur, 2016; Holmes & Nicolaescu, 2017); can be a team member as the first among equals (Blair *et al.*, 2010; Britto *et al.*, 2016); aligns multi-team coordination requirements and opportunities (Nord *et al.*, 2014); builds bridges between teams (Hohpe *et al.*, 2016); influences team morale (Bass, 2017); considers highly skilled teams (Shahin *et al.*, 2019); supports the team members conventionally more business-oriented (Bass, 2019).

Pragmatic Architect (Architectural perspective)

Architectural vision and decomposition strategy: The architect delivers architecture as a service (Blair *et al.*, 2010; Faber, 2010); defines the architectural vision and gives good examples (Buschmann, 2012; Martensson *et al.*, 2019); provides a coherent and sustainable product architecture (Erder & Pureur, 2016); understands the system, its parts, and how they communicate (Bass, 2017); drives decomposing strategies (Shahin *et al.*, 2019); designs loosely coupled architectures (Shahin *et al.*, 2019); plans for integration in steps (Martensson *et al.*, 2019).

Focus on QA & ASR: The architect focuses on quality attributes (QA) and architecturally significant requirements (ASR) (Faber, 2010; Woods, 2016; Larrucea *et al.*, 2018; Waterman, 2018a); identifies defects that are key to sustainability and evolution (Britto *et al.*, 2016); manages architecture and monitors the current state of architecture (Martini & Bosch, 2016; Holmes & Nicolaescu, 2017); defines the most important characteristics (Martensson *et al.*, 2019); communicates clearly and continuously the importance of the main ASR (Martensson *et al.*, 2019); has feedback from the team or analysis tools on the status of the system, to understand if the architectural requirements are at risk (Martensson *et al.*, 2019).

Simple high-level design: The architect defines boundaries and work frames, selects templates and components (Madison, 2010; Durdik, 2011); documents top-level macro architecture (Gerdes *et al.*, 2016); creates a high-level design, in particular, interactions among components/services (Shahin *et al.*, 2019); uses architecture standards, reference architectures and well-accepted architectural principles to gain control of complexity (Sturtevant, 2017; Bass, 2019); establishes and refines conventions for structuring large scale software systems (Bass, 2019); creates a software structure that enables the autonomy and effectiveness of the developers (Martensson *et al.*, 2019); manages architectural health as a codebase grows (Sturtevant, 2017); uses good practices to keep designs simple (Waterman, 2018a).

Planning for options and delay of decisions: The architect’s main result of work is decisions, not documentation (Poort, 2014); delays decisions, plans for options, and thinks in the direction of the Minimum Viable Architecture (MVA) (Blair *et al.*, 2010; Madison, 2010; Hadar & Sherman, 2012; Buschmann & Henney, 2013; Erder & Pureur, 2016; Holmes & Nicolaescu, 2017; Waterman, 2018a; Shahin *et al.*, 2019); takes responsibility for decisions that are risky, expensive, and difficult to change (Woods, 2016; Bass, 2017); uses pragmatic modeling (Hohpe *et al.*, 2016; Zimmermann, 2016).

Fast delivery before reuse: The architect designs systems for rapid delivery in different environments (Erder & Pureur, 2016); avoids overthinking about reusability, but understand that a lack of explicit control on reuse makes CD harder (Shahin *et al.*, 2019); uses a balanced approach where system design and architecture effort is focused on the system's most important characteristics (Martensson *et al.*, 2019).

Servant Leader & Facilitator (Development perspective)

Team support: The architect understands source code and codes as needed (Babar, 2009; Madison, 2010; Buschmann, 2012; Mirakhorli & Cleland-Huang, 2013; Erder & Pureur, 2016); transfers technical knowledge as a consultant (Babar, 2009; Martini & Bosch, 2016; Martensson *et al.*, 2019); assists the team in “breaking the rules” (Faber, 2010); removes barriers that block team agility and frustrate stakeholders (Buschmann & Henney, 2013; Mirakhorli & Cleland-Huang, 2013; Erder & Pureur, 2016; Woods, 2016); translates complex concepts into understandable concepts (Hohpe *et al.*, 2016); works in a decentralized style (Erder & Pureur, 2016); helps the team understand and implement the chosen development process and best practices (Bass, 2019).

Architectural agility: The architect is involved in all stages of the development process (Hadar & Sherman, 2012); evaluates a design, code, and functionality - uses tools (Madison, 2010; Mirakhorli & Cleland-Huang, 2013); rules the delivery process (Erder & Pureur, 2016); maximizes the team's architectural agility (Waterman, 2018a); places greater emphasis on evolutionary changes (Shahin *et al.*, 2019); helps build architectures that are responsive to needs over time (Shahin *et al.*, 2019); balances focus on agile process and agile architecture (Sturtevant, 2017); uses an agile process to create a change-tolerant architecture (Waterman, 2018a); proves the architecture with code iteratively (Madison, 2010; Waterman, 2018a).

Communication: The architect prioritizes mentoring and learning over documentation (Mirakhorli & Cleland-Huang, 2013; Hohpe *et al.*, 2016); uses code as a form of documentation and a means of communication (Prause & Durdik, 2012); spends the most time with people living with his decisions (Buschmann, 2012; Mirakhorli & Cleland-Huang, 2013); minimizes multitasking on simultaneous projects (Erder & Pureur, 2016); implements the prescribed processes (Bass, 2017); communicates iteratively with the team (Martensson *et al.*, 2019); sees communication as a key challenge and encourage frequent and on-task communication among all stakeholders and team members (Ozkaya, 2019).

Preserving system integrity: The architect ensures that team's decisions are consistent throughout the system (Madison, 2010; Buschmann, 2012); influences design decisions that affect the whole system (Buschmann, 2012); protects the conceptual integrity of product architecture and design (Buschmann, 2012; Poort, 2014; Erder & Pureur, 2016); manages technical debt (Zimmermann, 2016); reduces risk to a level that's satisfactory to the team and stakeholders (Waterman, 2018b); balances between risk and agility (Waterman, 2018b); designs for failure in which, instead of preventing failures (reliability), learn how to deal with failures (resilience) (Shahin *et al.*, 2019).

Collaboration with users: The architect has empathy for users and works closely with users - the „follow-me-home” technique (Mirakhorli & Cleland-Huang, 2013); receives real requests from users feedback (Mirakhorli & Cleland-Huang, 2013); assesses team's and customer's risk tolerance (Waterman, 2018b); balances customer demands, with a focus on their delivery (Erder & Pureur, 2016); removes artificial barriers to delivering better, faster, cheaper software to the users (Ozkaya, 2019).

Workflow & Traffic Enabler (Operational perspective)

DevOps integration and automation: The architect engages in sophisticated DevOps development and production infrastructure (Nord *et al.*, 2014; O'Connor *et al.*, 2016; Larrucea *et al.*, 2018); takes into account the complete life cycle of the software product (Erder & Pureur, 2016); provides product delivery resources (Erder & Pureur, 2016); works with the team to ensure their familiarity with DevOps tools (Bass, 2017); ensures that the development, build, staging, and production environments are as identical as possible (Bass, 2017); takes care of the scaling, complexity, and distribution of the software (Britto *et al.*, 2016); makes tailored DevOps strategy (Larrucea *et al.*, 2018).

Monitoring & tracing: The architect in collaboration with the team defines the subject of monitoring and reporting (Bass, 2017); deals with errors when the system is in production (Bass, 2017); enables traceability and determination of the sequence of events that led to the error (Bass, 2017); extensively uses monitoring tools (Shahin *et al.*, 2019); exposes the different types of log and monitoring data with a standard format (Shahin *et al.*, 2019); makes architectural design decisions to improve the testability (Shahin *et al.*, 2019).

The second part of the SLR identifies the necessary competencies of an agile software architect, which include knowledge, skills, and experience, as well as personality:

Competencies

Knowledge, skills and experience: The architect is a generalist (inversion of specialization) (Zimmermann, 2016; Pautasso *et al.*, 2017a); deeply knows and understands the business domain (Martini & Bosch, 2016; Poort, 2016; Holmes & Nicolaescu, 2017); owns technical knowledge and experience (Buschmann & Henney, 2013; Erder & Pureur, 2016; Hohpe *et al.*, 2016; Martini & Bosch, 2016; Bass, 2017); has business, financial, educational, management and other non-technical skills (Poort, 2014; Hohpe *et al.*, 2016); he is a good and passionate communicator (Faber, 2010; Erder & Pureur, 2016; Hohpe *et al.*, 2016); knows technology and hardware infrastructure (Buschmann & Henney, 2013; Holmes & Nicolaescu, 2017); combines and transfers knowledge from isolated domains (Hohpe *et al.*, 2016); has experience in design (Buschmann & Henney, 2013); has the skills needed to communicate and collaborate (Erder & Pureur, 2016; Martini & Bosch, 2016); has experience working with different teams (Erder & Pureur, 2016); has a broad knowledge of the application of architectural and agile practices (Holmes & Nicolaescu, 2017); recognizes and nurtures talents (Bass, 2017); has technical expertise to coordinate agile teams (Bass, 2019).

Personality: The architect possesses leadership qualities (Buschmann, 2012; Woods, 2015; Hohpe *et al.*, 2016; Martensson *et al.*, 2019); charisma (Martini & Bosch, 2016); bases authority on knowledge and a willingness to help (Faber, 2010); has wide horizons (Erder & Pureur, 2016); can work in uncertain conditions (Erder & Pureur, 2016); assume responsibility (Hadar & Sherman, 2012); he is pragmatic (Buschmann & Henney, 2013).

B. CASE STUDY RESULTS

The results of the case study, realized by interviewing an agile software architect in Boksit, generally confirm the SLR results, with discrepancies and/or some doubt as to individual views, as well as the need to highlight the specific role of the agile software architect in the development of a complex business software system:

Understanding context, vision, and strategy: All 7 SLR positions were confirmed, with the further emphasized the need for „*an architect to view data as a strategic resource*”.

Business and IT alignment: There is full agreement with 4/6 SLR positions. There is no full agreement with the position that the architect can always understand how the system will be used (Mirakhorli & Cleland-Huang, 2013) because even the users themselves do not usually know it in advance, but rather „*needs intuition, lean thinking and moving forward in small steps*”. Also, it’s not a shared position that it is easy to evaluate the impact of architecture on cost and business value (Martini & Bosch, 2016; Poort, 2016). On the other hand, the architect is seen as „*a key factor in aligning business and digital strategy*”, which requires that „*the architect be focused on the effective operationalization of the business strategy, as well as understand the importance of linking strategic and operational goals with the data*”.

Risk and time dimension management: 4/6 SLR positions were confirmed. There is doubt about attitudes regarding the ability of an architect to pre-determine, both architectural impact on risk (Martini & Bosch, 2016; Poort, 2016) and technical risk in the development of complex and critical systems (Waterman, 2018b). In this connection, the need for „*the architect to keep the software system as open as possible for expansion and connection*” is particularly emphasized.

Horizontal and vertical organization structuring: 3/5 SLR positions were confirmed. In a dynamic environment, organizational change is very common, with the organizational structure being the result of the influence of context, vision and strategy. Therefore, there is a general agreement that the architect must deal with the structure of the organization (Nord *et al.*, 2014; Shahin *et al.*, 2019), but not in terms of defining it, but its influence on the development team, architecture and design of the software system according to Conway’s law. There is an agreement in attitude that more architects need to work closely together (Martensson *et al.*, 2019), but this has not been empirically verifiable. On the other hand, it is further emphasized that „*the architect must bear in mind the complex connection between the organizational structure and the culture of the organization*”.

Organizing and coordinating teams: 5/7 SLR positions were confirmed. Although there is general agreement on the positions regarding the organization and coordination of multiple teams (Nord *et al.*, 2014; Hohpe *et al.*, 2016), this could not be empirically confirmed. On the other hand, it is further emphasized that „*the architect must promote professionalism and discipline for both team members and key users*”.

Architectural vision and decomposition strategy: 6/7 SLR positions were confirmed. There is no agreement with the position that the architect should plan in the steps (Martensson *et al.*, 2019), because the integration must be in the architect’s focus from the beginning - through the development of the prototype, as in every subsequent iteration. On the other hand, it further emphasized that „*the architect should use the business architecture as a link between business goals and IT resources, as well as to better understand the interaction between the software system and the user*”.

Focus on QA & ASR: 5/6 SLR positions were confirmed. There is no agreement that the architect’s insight into the real state of the software system and understanding of architectural risks on sustainability and evolutivity may be primarily based on feedback from team members and analytical tools (Martensson *et al.*, 2019), but on the feedback from key users, a complete understanding the source code and design details to the lowest level, also. On the other hand, it is emphasized that „*the architect must consider safety aspects and requirements from the outset, as security significantly affects the overall design*”.

Simple high-level design: 7/8 SLR positions were confirmed. Although there is a general agreement to define and implement conventions when it comes to structuring large scale software systems (Bass, 2019), this could not be empirically confirmed. On the other hand, it is emphasized that „*the architect should use the Convention Over Configuration design paradigm to keep under control the number of design decisions, especially when it comes to sharing common information between parts of a software system*”.

Planning for options and delay of decisions: All 5 SLR positions were confirmed, with the further emphasized the need that „*the architect must pay particular attention to the possible negative impact of design decisions on the rights, preferences, customization, and personalization of users*”.

Fast delivery before reuse: All 3 SLR positions were confirmed, with the further emphasized the need that „*the architect must take care of the delivery of both, current and future values to the user*”.

Team support: 6/7 SLR positions were confirmed. While there is a general agreement with the position that an architect should translate complex concepts into understandable terms (Hohpe et al., 2016), it is emphasized that before that, “*in communication with team members and users, the architect must fully clarify and define all complex concepts in order to software system be user-friendly*”.

Architectural agility: 7/9 SLR positions were confirmed. The dogmatic application of agile processes is not sufficient for the continuous rapid, independent delivery of autonomous parts of a complex software system to the production environment. Therefore, there is no full agreement on the positions of balanced focus on agile process and agile architecture (Sturtevant, 2017), and use an agile process to create a modifiable, change-tolerant architecture (Waterman, 2018a). Instead of the dogmatic application of agile processes, it is much more important that „*the architect continuously creates, adapts and advances the conditions for increasing the agility of the development team, the development process, and architecture, especially in a context that requires the integration of existing complex business software systems*”. On the other hand, it is emphasized that „*the architect should use design principles that support architectural agility*”.

Communication: 7/8 SLR positions were confirmed. There is no full agreement with the position that the architect and the team should communicate only iteratively (Martensson et al., 2019), but „*at any time when the need arises, the sooner the better*”.

Preserving system integrity: All 3 SLR positions were confirmed. Besides, it is emphasized that „*the architect must have a special responsibility for the application of systemic business rules and the preservation of the integrity of shared resources*”.

Collaboration with users: 4/5 SLR positions were confirmed. There is no full agreement with the position that the architect receives the right requests only from user feedback (Mirakhorli & Cleland-Huang, 2013), but emphasizes that the user requirements should be the result of a proactive approach in which „*the architect, by relying on his knowledge and experience, through continuous collaboration and communication helps from the outset key users to better articulate requirements for the development of a minimum viable product*”.

DevOps integration and automation: 6/7 SLR positions were confirmed. While there is an agreement that the architect must deal with DevOps production infrastructure (Nord et al., 2014;

O'Connor *et al.*, 2016; Larrucea *et al.*, 2018), it is noted that infrastructure does not have to be highly sophisticated or fully automated. On the other hand, it was emphasized that „*an architect must be able to implement a secure development, test and production environment, usually in the form of a private cloud, using technologies that have reached a certain level of maturity*”.

Monitoring & tracing: 5/6 SLR positions were confirmed. Although there is an agreement with the position that the architect must use monitoring tools (Shahin *et al.*, 2019), it is emphasized that this not need be so intense, but that „*the architect should adjust the degree of monitoring and logging to the needs*”.

Knowledge, skills and experience: 12/13 SLR positions were confirmed. While there is general agreement on the position that an architect must possess the technical expertise to coordinate agile teams (Bass, 2019), this could not be empirically confirmed. Besides, it was emphasized that „*the architect must be able to solve very complex problems and situations, as well as support the adoption of new, innovative technologies and their proper application*”. Also, specialization inversion is necessary „*not only for the architect but for other team members too*”.

Personality: All 7 SLR positions were confirmed. Besides, it is emphasized that „*the architect must have a good intuition and an open mind to solve non-standard, complex problems, in which he must show exceptional commitment and perseverance*”.

4. DISCUSSION

In this section, general considerations are given, the results obtained are discussed and the research question is answered, the results are compared to other similar studies, and the limitations of the research are presented:

General considerations: Regarding the theoretical part of the research (SLR), out of a total of 33 selected studies, 23 (70%) were published in a journal and 10 (30%) at conferences. Most of the papers were based on expert opinion 15 (46%), followed by empirical studies 10 (30%) and papers based on experience 8 (24%). Bearing in mind that papers based on the opinion and/or experience of experts are prevalent, the results of theoretical research have been further validated through a case study. The results of the case study indicate a high percentage of complete agreement with SLR positions (109/128 or 85%), with the lowest agreement regarding organizational (8/12 or 69%) and business (15/19 or 79%) perspectives, while the highest agreement is with the positions from an architectural perspective (26/29 or 90%). On the other hand, the results of the case study further point to certain specifics when it comes to the role and competence of an agile software architect in the development of a complex business software system, especially from a business and organizational perspective.

The answer to the research question: The role of an agile software architect has changed dramatically compared to that of a traditional software architect. It has evolved from a specialist in the traditional architectural domain, focusing on making costly changes in the early stages of the project, planning functionalities and defining a detailed structure and behavior of the system, to a generalist in the digital-architectural world, with evolution, change and time in focus. On the long side, the role of a software architect has changed in the agile movement as well. It has evolved from an initial stance of „no software architect at all”, through „team as an architect”, to a software architect as a member of an agile team responsible for the top-level architecture design. The intensive development of Internet-based systems, cloud technologies, CD and DevOps practices, and the growing

use of microservices, which enable rapid, autonomous software delivery in a distributed production environment and rapid user feedback, have contributed in particular to this. Digital technology development, digital innovation and digital disruption create a business environment where new business models are increasingly relying on digital strategies, which are changing traditional IT strategies, with the tendency to become business strategies. In this context, instead of the traditional “ivory tower” (top-down) role, on the one hand, and „no software architect at all”, through „team as an architect” (bottom-up), on the other hand, the software architect should take the middle-out role. Such a role means greater responsibility, extended beyond the software architecture and software development process, to the business vision and strategy, organizational aspects and DevOps infrastructure. It requires much more knowledge, skills and experience, as well as appropriate personality traits. An agile software architect is a leader of change, not only a pragmatic architect who leads a team and serve the team, but a key element that connects business vision, strategy, business goals, IT resources, parts of the organization, teams, and stakeholders, in a way that promotes and enables evolutionary development and continuous delivery of software to the production environment, to ensure a continuous flow of value for the user, in the short and long term.

Related work: To the best of our knowledge, the only paper exploring the role of software architect in an agile development process using SLR methods and empirical research has been published by Marić & Tumbas (2016). The authors note that the software architect is formally a member of an agile team, usually a senior developer and/or team leader, involved in the entire development process. Design decisions are made by the software architect in collaboration with the client while coordinating the team’s work on the detailed design. In addition to the software architect role, the authors identify the following roles: system architect - who has a managerial position in the organization and is responsible for the architecture of the entire system; and solution architect - who is part of the software delivery team and work closely with the client organization operations team. The authors conclude that because of the great architectural challenges, agile team seeks to shift responsibility for architecture to a software architect, who must be an experienced individual, with superior technical knowledge. Although the results indicate the importance of a software architect in an agile team, research is limited to the software development process, while the business, organizational, and infrastructure dimensions are partially addressed through a brief description of the roles of the system and solution architect. If we compare the results of Marić & Tumbas (2016) with the described role of agile software architect in the era of digital disruption and transformation, we can see a trend of integrating the roles of software, system and solution architect.

Limitations: To reduce the risk of bias more researchers are involved in all phases of SLR and case study research. To reduce the risk of omission of relevant studies, the query is tailored to each database with an additional manual search. However, the risk of bias of primary study authors should also be taken into account, as papers based on the opinion or experience of the author predominate. On the other hand, the case study is based on the example of the development of complex business software in one company and qualitative data, where a semi-structured interview technique was applied for qualitative analysis.

5. FUTURE RESEARCH DIRECTIONS

Several trends can be observed. The trend of inversion of specialization is spreading to all members of the development team, which is related to the decrease in the size of the development team and the appearance of the so-called “two-pizza” teams, whose members are extremely qualified, disciplined and motivated. Thus, the development of microservices requires full-stack developers who combine database design, integration, domain business logic and user interface skills. Also,

there is a trend of decreasing the number of architectural decisions by encapsulating them into the technological DevOps environment, middleware platforms, software tools and collaborative development environment. This trend is especially supported by the growing of serverless computing infrastructure for services deployment and scaling, which is hidden from developers (Hohpe *et al.*, 2016; Pautasso *et al.*, 2017b). On the other hand, despite expectations that the role of the software architect becomes virtual or the responsibility of the team, it seems that the agile software architect takes a key place in the software development and delivery process, with an exciting future ahead with the new challenges of developing the next generation of intelligent-connected systems, systems made up of external services, as well as the use of ML (Machine Learning) and analytics in system design, the integration of many IoTs, and the use of dynamic run-time. It is expected that architecture from the static structure and quantified data will gradually evolve into something that is more statistical characteristics and trends, with the increasing importance of algorithms and data, software-defined architectural design and dynamic service composition. The role of an agile software architect will also evolve towards increased monitoring of information flow and decision making just-in-time, with increasing AI (Artificial Intelligence) support, increased focus on politics, policies, algorithms and probability (Hohpe *et al.*, 2016; Woods, 2016). Therefore, future research could more closely address the identified trends.

6. CONCLUSION

Digital disruptors are organizations that take advantage of the favorable conditions of intensive digital technology development to expand digital innovation that is changing the paradigm of business across all industries. This puts a great deal of external pressure on other organizations, which must increase agility while preserving the flexibility of digital strategy and IT resources to transform and adequately respond to the challenges of digital disruption. In this regard, this paper presents the results of a combined theoretical (SLR) and empirical (case study) research of the impact of digital disruption and transformation on changing the importance, role, responsibility, competencies, and agility of a software architect, with particular reference to the development of complex business software systems. Within the SLR, 33 papers from journals and conferences were selected and analyzed, while a case study of a complex business software system was conducted.

The research findings indicate the increased importance, and changed the role and responsibilities of an agile software architect in the era of digital disruption and transformation. The SLR identified and confirmed through a case study 5 key agile software architect roles in 5 different perspectives: 1) *Leader of Change* role from a business perspective - assumes responsibilities related to understanding context, business vision, and strategy, aligning business and IT, and risk & time management; 2) *Linking Element* role from an organizational perspective - implies responsibilities related to horizontal and vertical structuring of the organization, team's organization and coordination; 3) *Pragmatic Architect* role from an architectural perspective - implies responsibilities related to architectural vision and decomposition strategy, focus on quality attributes and architecturally significant requirements, simple top-level design, planning for options and delay of decisions, and a greater focus on fast delivery, relative to reuse; 4) *Servant Leader & Facilitator* role from a development perspective - implies responsibilities related to team support, architectural agility, communication, preservation of product integrity and collaboration with customers; and 5) *Workflow & Traffic Enabler* role from an operational perspective - assumes responsibilities related to DevOps integration, automation, monitoring, and tracing. To successfully realize these roles and responsibilities, agile software architect must have exceptional competencies, which imply a very broad knowledge, skills and experience, as well as appropriate personality traits to achieve a synergistic effect in working with stakeholders, especially with other team members and key users.

The results have implications for both, practitioners and the scientific community. It can be stated that the traditional “ivory tower” role of the software architect has been overcome, as well as the initial expectations of the agile approach proponents that the software architect has no place in the agile team and/or that the architecture should be the responsibility of the agile team. Instead, findings suggest that an agile software architect needs to take a middle-out position on the shoulders of the team to fully realize all different roles in related perspectives - the scope of which extends beyond the software product life cycle. In doing so, organizations can use the identified competencies as additional recruitment guidelines, for both, agile software architects and beginners who have the potential to take on such a challenging role over time. On the other hand, the obtained results enable a better understanding of the importance of an agile software architect for aligning business and digital strategy, as well as its contribution to increasing the agility of the process of development and integration of complex business software systems.

Given the limitations of the research, the results obtained should be subject of additional empirical research, in different contexts of the development of complex software systems, with a particular focus on the business and organizational perspective. Further research could address in more detail the observed trends related to inversion of specialization, the impact of technology on reducing the number of architectural decisions, the challenges of developing the next generation of intelligent-connected systems, and the further evolution of the role of agile software architect in such an environment.

REFERENCES

- Babar, M. A. (2009) ‘An exploratory study of architectural practices and challenges in using agile software development approaches’, in *2009 Joint Working IEEE/IFIP Conference on Software Architecture & European Conference on Software Architecture*, pp. 81–90.
- Baiyere, A. & Hukal, P. (2020) ‘Digital Disruption: A Conceptual Clarification’, *Proceedings of the 53rd Hawaii International Conference on System Sciences*, 3, pp. 5482–5491.
- Bass, J. M. (2019) ‘Agile on a Large Scale’, *Itnow*, 61(1), pp. 56–57.
- Bass, L. (2017) ‘The Software Architect and DevOps’, *IEEE Software*, 35(1), pp. 8–10.
- Berman, S. J. (2012) ‘Digital transformation: Opportunities to create new business models’, *Strategy and Leadership*, 40(2), pp. 16–24.
- Blair, S., Watt, R. & Cull, T. (2010) ‘Responsibility-driven architecture’, *IEEE Software*, 27(2), pp. 26–32.
- Britto, R., Šmite, D. & Damm, L. O. (2016) ‘Software Architects in Large-Scale Distributed Projects: An Ericsson Case Study’, *IEEE Software*, 33(6), pp. 48–55.
- Buschmann, F. (2012) ‘A week in the life of an architect’, *IEEE Software*, 29(3), pp. 94–96.
- Buschmann, F. & Henney, K. (2013) ‘Architecture and agility: Married, divorced, or just good friends?’, *IEEE Software*, 30(2), pp. 80–82.
- Dragičević, Z. & Bošnjak, S. (2019a) ‘Agile architecture in the digital era: Trends and practices’, *Strategic Management*, 24(2), pp. 12–33.
- Dragičević, Z. & Bošnjak, S. (2019b) ‘Digital transformation in the mining enterprise: The empirical study’, *Mining and Metallurgy Engineering Bor*, (1–2), pp. 73–90.
- Dragičević, Z. & Bošnjak, S. (2019c) ‘Harmonizing business and digital enterprise strategy using SOA middle-out and service-based approach’, *Journal of Engineering Management and Competitiveness (JEMC)*, 9(2), pp. 97–112.
- Durdik, Z. (2011) ‘Towards a process for architectural modelling in agile software development’, in *Proceedings of the joint ACM SIGSOFT conference -- QoSA and ACM SIGSOFT symposium -- ISARCS on Quality of software architectures -- QoSA and architecting critical systems -- ISARCS - QoSA-ISARCS '11*, pp. 183–192.

- Dybå, T. & Dingsøyr, T. (2008) 'Empirical studies of agile software development: A systematic review', *Information and Software Technology*, 50(9–10), pp. 833–859.
- Eisenhardt, K. M. & Graebner, M. E. (2007) 'Theory Building from Cases: Opportunities and Challenges', *The Academy of Management Journal*, 50(1), pp. 25–32.
- Erder, M. & Pureur, P. (2016) 'What's the Architect's Role in an Agile, Cloud-Centric World?', *IEEE Software*, 33(5), pp. 30–33.
- Faber, R. (2010) 'Architects as service providers', *IEEE Software*, 27(2), pp. 33–40.
- Gerdes, S., Jasser, S., Riebisch, M., Schröder, S., Soliman, M., *et al.* (2016) 'Towards the essentials of architecture documentation for avoiding architecture erosion', *Proceedings of the 10th European Conference on Software Architecture Workshops - ECSAW '16*, pp. 1–4.
- Hadar, I. & Sherman, S. (2012) 'Agile vs. plan-driven perceptions of software architecture', *2012 5th International Workshop on Co-operative and Human Aspects of Software Engineering, CHASE 2012 - Proceedings*, pp. 50–55.
- Hohpe, G., Ozkaya, I., Zdun, U. & Zimmermann, O. (2016) 'The Software Architect's Role in the Digital Age', *IEEE Software*, 33(6), pp. 30–39.
- Holmes, B. & Nicolaescu, A. (2017) 'Continuous Architecting: Just another buzzword?', in *Full-scale Software Engineering/The Art of Software Testing*, pp. 1–6.
- Jalali, S. & Wohlin, C. (2012) 'Systematic Literature Studies: Database Searches vs. Backward Snowballing', in *ESEM'12: Proceedings of the ACM-IEEE International Symposium on Empirical Software Engineering and Measurement*, pp. 29–38.
- Kitchenham, B. (2007) 'Guidelines for performing Systematic Literature Reviews in Software Engineering'.
- Kruchten, P. (2019) 'The End of Agile as We Know It', in *IEEE/ACM International Conference on Software and System Processes (ICSSP)*. Institute of Electrical and Electronics Engineers (IEEE), pp. 104–104.
- Larrucea, X., Santamaria, I., Colomo-Palacios, R. & Ebert, C. (2018) 'Microservices', *IEEE Software*, 35(3), pp. 96–100.
- Liere-Netheler, K., Vogelsang, K., Packmohr, S. & Hoppe, U. (2018) 'Towards a Framework for Digital Transformation Success in Manufacturing', *26th European Conference on Information Systems (ECIS 2018)*, (Schwab 2017), pp. 1–19.
- Madison, J. (2010) 'Agile–Architecture Interactions', *IEEE Software*, 27(2), pp. 41–48.
- Marić, M. & Tumbas, P. (2016) 'The role of the software architect in agile development processes', *Strategic Management*, 21(1), pp. 16–22.
- Martensson, T., Stahl, D., Martini, A. & Bosch, J. (2019) 'Continuous architecture: Towards the goldilocks zone and away from vicious circles', *Proceedings - 2019 IEEE International Conference on Software Architecture, ICSA 2019*. IEEE, pp. 131–140.
- Martini, A. & Bosch, J. (2016) 'A multiple case study of continuous architecting in large agile companies: current gaps and the CAFFEA framework', *Proceedings - 2016 13th Working IEEE/IFIP Conference on Software Architecture, WICSA 2016*, pp. 1–10.
- McQuivey, J. (2013) *Digital disruption: Unleashing the next wave of innovation*. Forrester Research.
- Mirakhorli, M. & Cleland-Huang, J. (2013) 'Traversing the twin peaks', *IEEE Software*, 30(2), pp. 30–36.
- Nord, R. L., Ozkaya, I. & Kruchten, P. (2014) 'Agile in Distress: Architecture to the Rescue', in *International Conference on Agile Software Development*, pp. 43–57.
- O'Connor, R. V. O., Elger, P. & Clarke, P. M. (2016) 'Exploring the impact of situational context – A case study of a software development process for a microservices architecture', in *2016 IEEE/ACM International Conference on Software and System Processes (ICSSP)*, pp. 6–10.

- Ozkaya, I. (2019) 'Are DevOps and Automation Our Next Silver Bullet?', *IEEE Software*. IEEE, 36(4), pp. 3–95.
- Pautasso, C., Zimmermann, O., Amundsen, M., Lewis, J. & Josuttis, N. (2017a) 'Microservices in Practice, Part 1: Reality Check and Service Design', *IEEE Software*, 34(1), pp. 91–98.
- Pautasso, C., Zimmermann, O., Amundsen, M., Lewis, J. & Josuttis, N. (2017b) 'Microservices in Practice, Part 2: Service Integration and Sustainability', *IEEE Software*, 34(2), pp. 97–104.
- Poort, E. (2014) 'Driving agile architecting with cost and risk', *IEEE Software*, 31(5), pp. 20–23.
- Poort, E. (2016) 'Just Enough Anticipation: Architect Your Time Dimension', *IEEE Software*, (December), pp. 11–15.
- Prause, C. R. & Durdik, Z. (2012) 'Architectural design and documentation: Waste in agile development?', *2012 International Conference on Software and System Process, ICSSP 2012 - Proceedings*, pp. 130–134.
- Prikladnicki, R., Lassenius, C. & Carver, J. C. (2017) 'Trends in Agile Updated: Perspectives from the Practitioners', *IEEE Software*, 35(1), pp. 109–111.
- Shahin, M., Zahedi, M., Babar, M. A. & Zhu, L. (2019) 'An empirical study of architecting for continuous delivery and deployment', *Empirical Software Engineering*, 24(3), pp. 1061–1108.
- Skog, D. A., Wimelius, H. & Sandberg, J. (2018) 'Digital Disruption', *Business and Information Systems Engineering*. Springer Fachmedien Wiesbaden, 60(5), pp. 431–437. Available at: <https://doi.org/10.1007/s12599-018-0550-4>.
- Sturtevant, D. (2017) 'Modular Architectures Make You Agile in the Long Run', *IEEE Software*, 35(1), pp. 104–108.
- Waterman, M. (2018a) 'Agility, risk, and uncertainty, part 1: Designing an agile architecture', *IEEE Software*, 35(2), pp. 99–101.
- Waterman, M. (2018b) 'Agility, Risk, and Uncertainty, Part 2: How Risk Impacts Agile Architecture', *IEEE Software*, 35(3), pp. 18–19.
- Webster, J. & Watson, R. T. (2002) 'Analyzing the Past to Prepare for the Future: Writing a Literature Review', *Source: MIS Quarterly*, 26(2).
- Westerman, G., Calm ejane, C., Bonnet, D., Ferraris, P. & McAfee, A. (2011) 'Digital transformation: a roadmap for billion-dollar organizations', *MIT Center for Digital Business and Capgemini Consulting*, pp. 1–68.
- Woods, E. (2015) 'Aligning Architecture Work with Agile Teams', *IEEE Software*, 32(5), pp. 24–26.
- Woods, E. (2016) 'Software Architecture in a Changing World', *IEEE Software*, 33(6), pp. 94–97.
- Zimmermann, O. (2016) 'Designed and Delivered Today, Eroded Tomorrow? Towards an Open and Lean Architecting Framework Balancing Agility and Sustainability', in *Proceedings of the 10th European Conference on Software Architecture Workshops*, p. 7.

THE IMPACTS OF ROBOTS AND ARTIFICIAL INTELLIGENCE ON SERVICE QUALITY IN THE HOTEL INDUSTRY

Suzana Marković¹ 
Sanja Raspor Janković² 
Vedran Zubović³ 

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Abstract: *Service robots and artificial intelligence promise to improve the service quality. Robotics in combination with rapidly improving technologies like artificial intelligence, bring opportunities for a wide range of innovations that have the potential to change service quality in hotel industry. Based on an extensive literature review, this article presents the acceptance of service robots in hotel industry. The paper acknowledges that the adoption of the robots and artificial intelligence on service quality is focused on the challenges of technological characteristics, customers' readiness and practical effectiveness of the business. The study provides a comprehensive and systematic review of robots and AI concepts in a hotel industry and examines their impacts on service quality. The hotel industry future is going to be affected with high-tech tourism companies offering robot-automated services which rely on guidance to adopt and integrate robotics into their customer service operations.*

Keywords: *Robots, Service Quality (SQ), Artificial Intelligence (AI), Hotel Industry, Content Analysis.*

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✉ suzanam@fthm.hr

¹ University of Rijeka, Faculty of Tourism and Hospitality Management, Primorska 42, 51410 Opatija, Croatia

² Polytechnic of Rijeka, Trpimirova 2, 51000 Rijeka, Croatia

³ University of Rijeka, Faculty of Tourism and Hospitality Management, Primorska 42, 51410 Opatija, Croatia

1. INTRODUCTION

Artificial intelligence and service robots are in major presence in hotel industry in recent years. It is imperative for hotel industry to find new innovative sources for improving the service quality including digital technologies and AI. The term AI denotes behavior of a machine able to perform human tasks in the same way (Simmons, A. B., Chappell, S. G., 1988). As robots and AI are predicted to have a profound impact on the quality service and guest experience the goal of this article is to summarize the interaction between service quality, e-service quality and robotic service quality. The purpose of this study is to provide a comprehensive review of correlations between these concepts by analyzing relevant papers identified via Scopus, Web of Science, ResearchGate and Google Scholar. This paper presents the results of content analysis of the academic literature of robots, service quality, e-service quality and robotics service quality concepts in hotel industry. The findings underline the theoretical and practical discussions of robotic service quality toward human perceptions and attitudes in hotel industry.

2. THORETICAL FRAMEWORK

The application of new technologies such as robots, AI and service automation (RAISA), leads to an increasing number of studies in tourism and hospitality which are examining the deployment of robotic technology (Chan, A. P. H., Tung, V. W. S., 2019). Focused on the technological capacity to perform tasks, AI initially was envisioned as a way to combine perception, reasoning, and actuation focused more on algorithms (virtual), while robotics has been focused on mechanical functioning of AI (Belanche, D., et al., 2020). Artificial intelligence is associated with the ability of machines to understand and use human language and then continue to work on their own (Lukanova, G., Ilieva, G., 2019). The term “robot” originated from the Czech word robota and means forced labor and “has evolved in meaning from dumb machines that perform menial, repetitive tasks to the highly intelligent anthropomorphic robots of popular culture” (Lanfranco, A. R., et al., 2004). Robots are classified in two major categories: industrial robots and service robots where service robots (professional and personal service robots) are designed to support and service humans through physical and social interactions (International Organization for Standardization, 2012).

Table 1. Robots in Hotel Industry – definitions and aspects

Author (Year)	Definition	Google Scholar Citation
Webster, C., Ivanov, S. (2020)	Robots are service agents that deliver services to customers.	1
Wirtz, J., et al. (2018)	Service robots are system-based autonomous and adaptable interfaces that interact, communicate and deliver service to an organization’s customers.	162
Murphy, J., et al. (2017)	Robots are relatively autonomous physical devices capable of motion and performing a service.	72
Zalama, E., et al. (2014)	Robots in hotel industry are devices with certain characteristics: embodiment, emotion, dialogue, personality, human-oriented perception, environment modeling, social learning and intentionality.	36

Chen, Y., Hu, H. (2013)	A robot is a perfect example of intelligent physical devices. It is usually a system, which, by its appearance or movements, conveys a sense that it has intent or agency of its own.	102
Haidegger, T., et al. (2013)	A robot is an actuated mechanism programmable in two or more axes with a degree of autonomy, moving within its environment, to perform intended tasks.	86
Singer, P. W. (2009)	Robots are machines capable of carrying out complex series of actions.	1451
Parasuraman, R., Riley, V.(1997)	Robot is an execution by a machine agent (usually a computer) of a function that is carried out by a human.	3114

Source: Authors, 2020.

As stated in table 1, robots in hotel industry are mostly described as intelligent devices with a certain degree of autonomy, mobility, and sensory capabilities that allow them to perform intended tasks (Chen, Y., Hu, H., 2013; Murphy, J., et al., 2017). Following the technological innovations in hotel industry, robots are often seen as modern concepts of service quality in hotel industry (Ivanov, S. H., et al., 2017).

The development of service quality carried by robots can be described through different models of the service quality measurements. The first model for measuring service quality was developed by Grönroos in 1984. (Yarimoglu, E. K., 2015). Although service quality in hotel industry may underline a lot of different approaches, definitions mostly describe service quality as comparison of a customer's specific expectations regarding service (Berry, L. L., et al., 1988), perception after service consummation and degree of discrepancy between customers (Parasuraman, R., et al., 1988), competitive advantage to a business by establishing customer satisfaction and customer loyalty (Dedeoğlu, B. B., Demirer, H., 2015), long-term cognitive evaluation of business service offerings by customers (Zeithaml, V. A., et al., 2000), or overall impression of the relative inferiority/superiority of the organization and its service (Bitner, M. J., et al., 1994).

2.1. SQ and e-SQ in hotel industry

Lee, Y. C., et al. (2016) stated that most widely used instrument for measuring the service quality in various industries is a multi-item scale named SERVQUAL, developed by Parasuraman, A., et al. (1988) with five dimensions: *reliability, assurance, responsiveness, tangibles and empathy*. In addition, different measurements have been developed for service quality evaluation in hotel industry. Knutson, B., et al. (1990) developed LODGSERV, a consumers' expectations scale for measuring service quality in the hotel experience using five generic dimensions hypothesized by Parsuraman. Furthermore, Getty, J. M. and Thompson K.N. (1994) developed LODGQUAL scale to compare various properties existing under one management. HOLSERV scale is a shorter, more user-friendly version of SERVQUAL, developed to design service strategies that meet guests' expectations (Wong Ooi Mei, A., et al., 1999). Marković, S., and Raspor, S. (2010) developed a modified SERVQUAL scale to improve the crucial quality attributes and enhance service quality in hotel industry.

Service quality in evolution process with many important aspects of electronic commerce has influenced on the development of e-SQ. Starting with Information systems developed by DeLone, W. H., and McLean, E. R. (2002) through service commercialization, e-SQ may act as an intermediary from

e-SQ to robot service quality. Taherdoost, H., and Hassan, A. (2012) defined e-SQ as the provision of interactional, content centered and electronic-based service over electronic network and a critical factor for successful implementation and decent performance of any business in electronic environment. Service quality concepts has been successfully applied in the electronic commerce practices in hotel industry but there are factors influencing the success of e-SQ versus generic service quality measurements. E-SQ was developed in the context of service provided through electronic, internet customer relations, while SERVQUAL was developed in the context of services provided through personal interaction between customers and service providers (Ladhari, R., 2010). The fourth stage of service evolution is predicted to be “a-service” with three features: service automation and human–robot interaction, artificial intelligence and big data and smart travel experience (Leung, X. Y., 2019).

2.2. Robotic service quality in hotel industry

Parasuraman, A. (2000) developed Technology Readiness Index (TRI), a multiple-item scale to measure readiness to embrace new technologies including robots and AI. Many studies focus on software which implies a robotic service – *rService* defined as the service delivery channel by robot (Murphy, J., et al., 2019). Service robots can be physically or virtually present and that’s the way of dividing the AI interaction between e-SQ to robotic service quality (Lu, L., et al., 2019).

A new challenge for hotel industry is how to integrate and proactively incorporate new technologies into their efforts to improve service quality through automation process (Law, R., Jogaratnam, G., 2005). Automation becomes part of value creation processes in the service sector which follow the complexity of hotel industry operations connected to guest experience and service quality, as well as by inherent characteristics of a robot, such as intelligence, mobility, and sensory abilities (Ivanov, S. H., et al., 2017). In terms of design, humanoid or non-humanoid appearance, cognitive-analytical tasks and emotional-social tasks, robots contribute to quality measurement (Wirtz, J., et al., 2018).

Table 2. Robotic service quality in hotel industry

Author (Year)	Content	Sample (N)	Data analysis	Dimensions	Reliability/ Cronbach’s alpha	Google Scholar Citation
Lu, L., et al. (2019)	Willingness to integrate service robots into regular service transactions	440	EFA	<ul style="list-style-type: none"> • Performance efficacy • Intrinsic motivation • Anthropomorphism • Social influence • Facilitating Conditions • Emotions 	0.893 - 0.962	32
Ivanov, S., Webster, C. (2019)	Attitudes towards the use of service robots	1003	EFA	<ul style="list-style-type: none"> • Information provision • Housekeeping • Food, beverages and guidance • Robot autonomy • Personal services • Entertainment • Bookings, payments and documentation • First and last impression 	0.932	26
Li, J. J. et al. (2019)	Employees’ awareness of robotics	468	CFA, SEM	<ul style="list-style-type: none"> • AI and robotics awareness • Perceived organizational support • Competitive psychological climate • Turnover intention 	-	23

Choi, Y. et al. (2019)	SQ perceptions of robot interaction	339	EFA	<ul style="list-style-type: none"> • Interaction quality • Outcome quality • Physical service 	0.780 - 0.930	6
Tussyadi-ah, I. P., Park, S. (2018)	Consumer evaluation of two different hotel service robots	841	CFA, PLS-SEM	<ul style="list-style-type: none"> • Anthropomorphism • Animacy • Likeability • Perceived intelligence • Perceived security • Importance • Intention 	0.835 - 0.779	63
Stock, R. M., Merkle, M. (2017)	Human robot acceptance during service encounters	82	t-test	<ul style="list-style-type: none"> • Functional component • Informational component • Relational component 	-	19

Note: CFA - confirmatory factor analysis, EFA - exploratory factor analysis, SEM - structural equation measurement, PLS-SEM - partial least squares path modeling of structural equation measurement

Source: Authors, 2020.

Table 2 presents the most relevant robotic service quality measurements in the last 4 years in terms of willingness to use robotics by hotels, employee perceptions and attitudes of potential guests. Presented robotic SQ scale measurements mostly have been carried out from standard SQ measurements adapted to robots. Studies from 2019 are more reflected to the human robot interaction while others are mainly referring to functional components of robots in SQ. The factor analysis used in all researches indicate that intrinsic motivation, social influence, and emotions are more important than other dimensions for robotic driven hotel services. Information provision, housekeeping activities and processing bookings, are most appropriate areas of robot application in hotel. Choi, Y., et al. (2019) defined that people treat robots as social actors whose performance could be evaluated using service quality dimensions. Robotic service quality measurement scales are able to provide a know how model to the view of new hotel SQ practical implications.

3. CONCLUSION

Theoretically, this study presents the definitions and measurement scales of traditional service quality to robotic service quality. Previous studies conducted in hotel industry identified different outcomes with regard to the interpretation of dimensions used to contribute the measurement context of the service quality development: SQ – e-SQ – robotic service quality. Most common factors of perceived SQ to AI and robotic service quality development in hotel industry appears to be “reliability” and “tangibles”. Key dimensions characterizing hotel integration artificial intelligence and service robots into regular hotel service transactions are developed by measurement scales of people attitudes toward robots, consumer evaluation and employees’ awareness. Service robots’ abilities designed for hospitality firms still need to be improved to meet the demand of customers (Qiu, H., et al., 2020).

The analysis was based only on researches linking the study of robots in hotel industry in largest databases referring issues from a more general perspective. The correlation between researched frames could be in further research focus among strong and widespread inter-disciplinary research collaborations based on quantitative research design.

REFERENCES

- Belanche, D., Casaló, L. V., Flavián, C., & Schepers, J. (2020). Service robot implementation: a theoretical framework and research agenda. *The Service Industries Journal*, 40(3-4), 203-225. <https://doi.org/10.1080/02642069.2019.1672666>
- Berry, L. L., Parasuraman, A., & Zeithaml, V. A. (1988). The service-quality puzzle. *Business horizons*, 31(5), 35-43.
- Bitner, M. J., Booms, B.H. & Mohr, L.A. (1994). Critical Service Encounters: The Employee Viewpoint. *Journal of Marketing*, 58(4), 95-106. <https://doi.org/10.1177/002224299405800408>
- Chan, A. P. H., & Tung, V. W. S. (2019). Examining the effects of robotic service on brand experience: the moderating role of hotel segment. *Journal of Travel & Tourism Marketing*, 36(4), 458-468. <https://doi.org/10.1080/10548408.2019.1568953>
- Chen, Y., & Hu, H. (2013). Internet of intelligent things and robot as a service. *Simulation Modelling Practice and Theory*, 34, 159-171. <https://doi.org/10.1016/j.simpat.2012.03.006>
- Choi, Y., Choi, M., Oh, M., & Kim, S. (2019). Service robots in hotels: understanding the service quality perceptions of human-robot interaction. *Journal of Hospitality Marketing & Management*, 1-23. <https://doi.org/10.1080/19368623.2020.1703871>
- Dedeoğlu, B. B., & Demirer, H. (2015). Differences in service quality perceptions of stakeholders in the hotel industry. *International Journal of Contemporary Hospitality Management*. 27(1), 130-146. <https://doi.org/10.1108/IJCHM-08-2013-0350>
- DeLone, W. H. & McLean, E. R. (2002). Information systems success revisited. Proceedings of the 35th Annual Hawaii International Conference on System Sciences, Big Island, HI. 2966-2976, doi: 10.1109/HICSS.2002.994345.
- Getty J.M. & Thompson, K.N. (1994). A procedure for scaling perceptions of lodging quality. *Hospitality Research Journal*, 18(2), 75-96. <https://doi.org/10.1177/109634809401800206>
- Haidegger, T., Barreto, M., Goncalves, P., Habib, M. K., Ragavan, S. K. V., Li, H., Vaccarella, A., Perrone, R. & Prestes, E. (2013). Applied ontologies and standards for service robots. *Robotics and Autonomous Systems*, 61, 1215-1223. <https://doi.org/10.1016/j.robot.2013.05.008>
- International Federation of Robotics (IFR) (2012). Service robot, provisional definition of service robots, visited June 23, 2020. <http://www.ifr.org/service-robots/>
- Ivanov, S. H., Webster, C., & Berezina, K. (2017). Adoption of robots and service automation by tourism and hospitality companies. *Revista Turismo & Desenvolvimento*, 27(28), 1501-1517.
- Ivanov, S. H., & Webster, C. (2019). Perceived appropriateness and intention to use service robots in tourism. In Pesonen, J., & Neidhardt, J. (Eds.) *Information and Communication Technologies in Tourism 2019*, (pp. 237-248) Cyprus: Proceedings of the International Conference in Nicosia.
- Ivanov, S., Gretzel, U., Berezina, K., Sigala, M., & Webster, C. (2019). Progress on robotics in hospitality and tourism: a review of the literature. *Journal of Hospitality and Tourism Technology*. 10(4), 489-521. <https://doi.org/10.1108/JHTT-08-2018-0087>
- Ivanov, S., Webster, C., & Garenko, A. (2018). Young Russian adults' attitudes towards the potential use of robots in hotels. *Technology in Society*, 55, 24-32. <https://doi.org/10.1016/j.techsoc.2018.06.004>
- Knutson, B., Stevens, P., Wullaert, C., Patton, M., & Yokoyama, F. (1990). LODGSERV: A service quality index for the lodging industry. *Hospitality Research Journal*, 14(2), 277-284. <https://doi.org/10.1177/109634809001400230>
- Ladhari, R. (2010). Developing e-service quality scales: A literature review. *Journal of Retailing and Consumer Services*, 17(6), 464-477. <https://doi.org/10.1016/j.jretconser.2010.06.003>
- Lanfranco, A. R., Castellanos, A. E., Desai, J. P., & Meyers, W. C. (2004). Robotic surgery: a current perspective. *Annals of surgery*, 239(1), 14. doi: 10.1097/01.sla.0000103020.19595.7d.

- Law, R., & Jogaratnam, G. (2005). A study of hotel information technology applications. *International Journal of Contemporary Hospitality Management*, 17(2), 170-180. <https://doi.org/10.1108/09596110510582369>
- Lee, Y. C., Wang, Y. C., Chien, C. H., Wu, C. H., Lu, S. C., Tsai, S. B., & Dong, W. (2016). Applying revised gap analysis model in measuring hotel service quality. *SpringerPlus*, 5(1), 1191. <https://doi.org/10.1186/s40064-016-2823-z>
- Leung, X. Y. (2019). Technology-enabled service evolution in tourism: a perspective article. *Tourism Review*, 75(1), 279-282. <https://doi.org/10.1108/TR-06-2019-0229>
- Li, J. J., Bonn, M. A., & Ye, B. H. (2019). Hotel employee's artificial intelligence and robotics awareness and its impact on turnover intention: The moderating roles of perceived organizational support and competitive psychological climate. *Tourism Management*, 73, 172-181. <https://doi.org/10.1016/j.tourman.2019.02.006>
- Lu, L., Cai, R., & Gursay, D. (2019). Developing and validating a service robot integration willingness scale. *International Journal of Hospitality Management*, 80, 36-51. <https://doi.org/10.1016/j.ijhm.2019.01.005>
- Lukanova, G., & Ilieva, G. (2019). Robots, Artificial Intelligence, and Service Automation in Hotels. In Ivanov, S. and Webster, C. (Ed.) *Robots, Artificial Intelligence, and Service Automation in Travel, Tourism and Hospitality* (pp. 157-183). London: Emerald Publishing Limited. <https://doi.org/10.1108/978-1-78756-687-320191009>
- Markovic, S., Raspor, S. (2010). Measuring Perceived Service Quality Using SERVQUAL: A Case Study of the Croatian Hotel Industry. *Management*, 5(3).
- Wong Ooi Mei, A., Dean, A. M. & White, C. J. (1999). Analysing service quality in the hospitality industry. *Managing Service Quality: An International Journal*, 9(2), 136-143. <https://doi.org/10.1108/09604529910257920>
- Murphy, J., Gretzel, U., & Pesonen, J. (2019). Marketing robot services in hospitality and tourism: the role of anthropomorphism. *Journal of Travel & Tourism Marketing*, 36(7), 784-795. <https://doi.org/10.1080/10548408.2019.1571983>
- Murphy, J., Hofacker, C., & Gretzel, U. (2017). Dawning of the age of robots in hospitality and tourism: Challenges for teaching and research. *European Journal of Tourism Research*, 15, 104-111.
- Parasuraman, A. (2000). Technology Readiness Index (TRI) a multiple-item scale to measure readiness to embrace new technologies. *Journal of service research*, 2(4), 307-320. <https://doi.org/10.1177/109467050024001>
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perceptions of Service Quality. *Journal of retailing*, 64(1), 12.
- Parasuraman, R., & Riley, V. (1997). Humans and automation: Use, misuse, disuse, abuse. *Human factors*, 39(2), 230-253.
- Qiu, H., Li, M., Shu, B., & Bai, B. (2020). Enhancing hospitality experience with service robots: The mediating role of rapport building. *Journal of Hospitality Marketing & Management*, 29(3), 247-268. <https://doi.org/10.1080/19368623.2019.1645073>
- Simmons, A. B., & Chappell, S. G. (1988). Artificial intelligence-definition and practice. *IEEE Journal of Oceanic Engineering*, 13(2), 14-42.
- Singer, P. W. (2009). *Wired for war: The robotics revolution and conflict in the 21st century*, New York: Penguin.
- Stock, R. M., & Merkle, M. (2017). A service Robot Acceptance Model: User acceptance of humanoid robots during service encounters. In *2017 IEEE International Conference on Pervasive Computing and Communications Workshops* (pp. 339-344). IEEE. DOI: 10.1109/PERCOMW.2017.7917585

- Taherdoost, H., & Hassan, A. (2020). Development of an E-Service Quality Model (eSQM) to Assess the Quality of E-Service. In *Strategies and Tools for Managing Connected Consumers* (pp. 177-207). IGI Global. DOI: 10.4018/978-1-5225-9697-4.ch011.
- Tussyadiah, I. P., & Park, S. (2018). Consumer evaluation of hotel service robots. In B. Stangl & J. Pesonen (Eds.), *Information and communication technologies in tourism* (pp. 308–320). Cham: Springer. https://doi.org/10.1007/978-3-319-72923-7_24
- Webster, C., & Ivanov, S. (2020). *Robots in travel, tourism and hospitality: Key findings from a global study*. Varna: Zangador.
- Wirtz, J., Patterson, P. G., Kunz, W. H., Gruber, T., Lu, V. N., Paluch, S., & Martins, A. (2018). Brave new world: service robots in the frontline. *Journal of Service Management*. 29(5), 907-93. <https://doi.org/10.1108/JOSM-04-2018-0119>
- Yarimoglu, E. K. (2015). A Review of Service and E-Service Quality Measurements: Previous Literature and Extension. *Journal of Economic & Social Studies (JECOSS)*, 5(1).
- Zalama, E., Garcia-Bermego, J. G., Marcos, S., Dominguez, S., Feliz, R., Pinillos, R. & Lopez, J. (2014). Sacarino, a Service Robot in a Hotel Environment. In: Armada M., Sanfeliu A., & Ferre M. (Eds), *ROBOT2013: First Iberian Robotics Conference*. Advances in Intelligent Systems and Computing, 253. Springer, Cham https://doi.org/10.1007/978-3-319-03653-3_1
- Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2000). *A conceptual framework for understanding e-service quality: implications for future research and managerial practice*. Marketing Science Institute.

THE RESTRICTION OF HUMAN RIGHTS IN A PANDEMIC CRISIS: THE CASE OF UKRAINIAN LEGISLATION

Nadiia Kobetska¹ 

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Abstract: *The presented paper is aimed at substantiating the formal and legal grounds for the introduction of restrictions on human rights in the battle against the spread of COVID-19 in Ukraine. The analysis of restrictive measures introduced by the Government of Ukraine is conducted by the author on the basis of their interpretation and comparison of Ukrainian legislative acts that define the legal regimes of quarantine, an emergency situation and a state of emergency. The author analyzes the problematic legislative provisions that formed the basis for the introduction of quarantine measures and an emergency situation in Ukraine and established restrictions on the implementation of a number of the constitutional rights of citizens. The article substantiates the conclusion on the constitutionality and legality of restrictions on human rights under a state of emergency, which was not introduced in Ukraine.*

Keywords: *Covid-19, Human Rights, Quarantine, Emergency Situation, State of Emergency.*

JEL Classification K38

✉ nadiia.kobetska@pnu.edu.ua

¹ Vasyl Stefanyk Precarpathian National University, 57, Shevchenko Str., Ivano-Frankivsk, 76018, Ukraine

1. INTRODUCTION

The current global pandemic crisis has led to the introduction of emergency measures by states to protect the lives and health of the population. They, in turn, have led to significant restrictions on the normal functioning of society and human rights. The legitimacy and justification of restrictions on human rights, especially in emergencies, are complex and delicate issues. Today in Ukraine, the response to the emergency situation related to the spread of Covid-19 occurs in complex political (war in Eastern Ukraine, immaturity of political forces), economic (low efficiency of production, low income level, budget deficit), socio-cultural conditions (high unemployment, public distrust of the authorities, low level of legal culture). In addition, the legal system of the state is not properly formed. It is characterized by complexity, contradictions, the variability of legislation, the imbalance of the judicial system, lack of effective mechanisms of control and responsibility for the implementation of legal requirements. In such circumstances, the issue of the legality of restrictive measures is of particular importance.

2. ANALYSIS AND DISCUSSION

Ukraine is a member of the World Health Organization. It signed and committed to the International Health Regulations of 2005. It is the latest document that defines international mechanisms to combat the spread of diseases. Researchers, analyzing the corresponding regulations, emphasize their importance for organizing the battle against the increasing transnational threats of infectious diseases (Baker, & David, 2006; Agrawal, 2007; Von Bogdandy, & Villareal, 2020). Nevertheless, the main role in risk management in the state is played by national legislation and national authorities.

Ukrainian legislation that defines the mechanism for the protection of public health, including that from infectious diseases, includes a number of legislative acts, namely: Fundamentals of the Legislation of Ukraine on Health Care (1993), the Law of Ukraine „On Ensuring Sanitary and Epidemic Safety of the Population” (1994), the Law of Ukraine „On Protection of Population against Infectious Diseases” (2000) and dozens of regulations adopted to specify the main provisions of the law. The latter include, in particular, the Regulations on Sanitary Protection of the Territory of Ukraine (2011), developed on the basis of International Health Regulations.

Table 1. Quarantine - an emergency situation - a state of emergency

Grounds for comparison	Quarantine	Emergency situation	State of emergency
Legislative regulation	the Law of Ukraine “On Protection of Population against Infectious Diseases”	The Code of Civil Protection of Ukraine	the Law of Ukraine “On the Legal Status of a State of Emergency”
Grounds for implementation	the risk of the spread of infectious diseases	catastrophe, accident, fire, natural disaster, epidemic or other emergency that has caused (may cause) a threat to life or health, a large number of the dead and affected, significant material damage, etc.	man-made or natural disasters at national level that have led or may lead to human and material losses, pose a threat to citizens’ life and health; an attempt to seize state power or change the constitutional order of Ukraine through violence

Who implemented	the Cabinet of Ministers of Ukraine	the Cabinet of Ministers of Ukraine, regional state administrations (on their territories)	declared by the Decree of the President of Ukraine, which is subject to approval by the Verkhovna Rada of Ukraine within two days from the date of the address of the President of Ukraine
Territory affected	determined by the Cabinet of Ministers of Ukraine	the whole territory of the state or its separate areas	the whole territory of the state or its separate areas
Response measures	preventive, anti-epidemic and other measures	the introduction of a special procedure for interaction between subjects of civil defense to prevent and eliminate the consequences of emergencies	emergency measures, the exhaustive list of which is established by law
Restrictions on human rights	the possibility of restricting the rights of individuals and legal entities; introduction of additional responsibilities	The Code of Civil Protection of Ukraine does not contain provisions on the restriction of human rights and only defines the powers of subjects of civil defense, some of which relate to restrictions on rights (for example, restriction or prohibition of vehicle movement, entry into the emergency zone, etc.)	the possibility of restricting the constitutional rights of citizens defined by law; forced imposition of additional responsibilities

March 11, 2020, the Cabinet of Ministers of Ukraine by its resolution on the basis of Art. 29 of the Law of Ukraine „On Protection of Population against Infectious Diseases” introduced quarantine measures throughout Ukraine. On March 16, 2020, it was amended and the list of measures and prohibitions was expanded. In the meantime, the city of Kyiv and several oblasts (Ukraine’s administrative units) declared an emergency situation on their territories, which was extended to the entire territory of Ukraine by the order of the Cabinet of Ministers of Ukraine on March 25, 2020. At the official level, the option of declaring a state of emergency was also considered, but it was not implemented. Each of these legal regimes has its own characteristics and is governed by its own legal documents (their comparison is presented in Table 1).

In fact, these restrictions have been the subject of heated debate. The main issue is the question of the relationship (compromise) between the protection of people’s health and the restriction of the exercise of their rights. Gostin, & Berkman (2007), analyzing the specifics of pandemic control measures, emphasized that „multiple, targeted approaches are likely to be most effective, but they can have deep adverse consequences for the economy and civil liberties” (p. 141). The importance of respecting human rights, democracy and the rule of law in the context of the battle against the pandemic is indicated in the Information Document: Respecting democracy, rule of law and human rights in the framework of the COVID-19 sanitary crisis (2020) — a document approved by the Secretary General of the Council of Europe.

The Convention for the Protection of Human Rights and Fundamental Freedoms (1950) in Art. 8, 9, 10, 11 allows the possibility of interfering with the basic human rights „for the protection of health or morals or for the protection of the rights and freedoms of others”. Art. 15 of the Convention contains the following provision: „In time of war or other public emergency threatening the life of

the nation any High Contracting Party may take measures derogating from its obligations under this Convention to the extent strictly required by the exigencies of the situation, provided that such measures are not inconsistent with its other obligations under international law". The Constitution of Ukraine establishes the rule that „the constitutional rights and freedoms of a person and a citizen shall not be restricted, except in cases provided by the Constitution of Ukraine. Under the conditions of martial law or a state of emergency, certain restrictions on rights and freedoms may be established, with their terms indicated. The rights and freedoms provided in Art. 24, 25, 27, 28, 29, 40, 47, 51, 51, 55, 56, 57, 58, 59, 60, 61, 62, 63 of this Constitution shall not be restricted" (Art. 64). Art. 33, 34, 35, 36, etc. of the Constitution of Ukraine allow for the possibility of restricting rights „for the purpose of protecting the health of the population" and „in accordance with the Law."

Researchers (Gostin, & Berkman, 2007, pp. 147–150; Christoffersen, 2009; Barak, 2012; Dakhova, 2018) substantiate a number of provisions and principles that should underlie decisions on the restriction of individual human rights, based on the practice of European Court of Human Rights. Without going into detailed scientific and theoretical analysis, three basic principles can be singled out: 1) for the legitimacy of interference with human rights, it is necessary for the possibility of such interference to be envisioned by law, provided that this law establishes the grounds and the procedure for introducing such restrictions in a clear, detailed and exhaustive manner; 2) the restriction of rights is put in place in order to achieve a legitimate goal on the grounds of public necessity; 3) in the process of the introduction of restrictions the principle of proportionality between the reached result and the caused damage is observed.

The fact of the danger of the spread of coronavirus and its critical consequences for the life and health of the population today is beyond doubt. Therefore, we will not discuss the validity and social necessity of introducing restrictive measures in modern conditions. More questions arise about the content of Ukrainian legislation that has led to the introduction of special measures, including those related to the restriction of human rights. In this context, let us consider the analysis of the laws in Table 1.

The formal and legal basis for the introduction of quarantine throughout Ukraine in the Government Resolution is Art. 29 of the Law of Ukraine „On Protection of Population against Infectious Diseases". In the meantime, based on a systemic interpretation of the articles of this Law, it seems to refer to quarantine only in certain areas and not within the whole state and provides local authorities with additional powers in the areas where it is established. In addition, Art. 29 does not contain detailed instructions on the procedure and conditions for the restriction of human rights but only indicates such a possibility. The regime of an emergency situation (which is also introduced in Ukraine) in accordance with the Code of Civil Protection of Ukraine means increased readiness and coordination of state and local authorities that includes strengthening public order, informing citizens, disinfection of facilities and territories, etc. Nevertheless, the Code of Civil Protection of Ukraine also does not establish the procedure and conditions for restricting the rights of citizens. In addition, Art. 37 of the Code of Civil Protection of Ukraine establishes the provisions on declaring quarantine as a measure to respond to an emergency situation (after it is declared).

Another law is the Law of Ukraine „On the Legal Status of a State of Emergency". Its norms establish mechanisms of action in case of a real threat to the safety of citizens and define in detail the types of restrictive measures that may be introduced. Researchers characterize it as a mandatory component of the national security system (Kovaliv, Rutar, & Pavlyshyn, 2015). It contains the list of rights that may be restricted, the list of measures that may be taken by state bodies. In addition, it is introduced by the Verkhovna Rada of Ukraine in the form of a law defining restrictions on human rights. The state practice of Ukraine has an example of the introduction of a state of emergency in

connection with the disease of highly pathogenic avian influenza in a number of the districts of the Autonomous Republic of Crimea in 2005.

It is considered that the imposition of quarantine measures and restrictions on human rights in the battle against the spread of COVID-19 after a state of emergency is declared would be right and consistent with the Constitution of Ukraine. However, in Ukraine, in light of a conflicted relationship between political and social processes, the authorities were not ready to impose a state of emergency, which most citizens associate with dictatorial rule. Today, the actions of the Ukrainian authorities and the legality of the implementation of a number of measures are criticized in terms of formal and legal grounds. In addition, a number of restrictions were not clearly stated in the orders of the Government. These include, for instance, „involuntary hospitalization of patients with COVID-19”, the mechanism of which is not defined by Ukrainian law; „prohibition of staying in public places without wearing personal protective equipment” to explain the concept of „public place” and others. Human rights organizations record and publish unreasonable, in their opinion, restrictions on human rights, violations by representatives of law enforcement agencies during the introduction of quarantine restrictive measures (Typovi porushennia, 2020a; Typovi porushennia, 2020b).

3. FUTURE RESEARCH DIRECTIONS

The pandemic caused by COVID-19 has become a serious challenge for the whole world. The Ukrainian authorities organized themselves as quickly as possible to develop and implement measures to prevent a rapid spread of the infection. The result of the timely introduction of quarantine restrictive measures presented a satisfactory picture of the morbidity of the population. In the meantime, the quarantine measures applied were objectively related to interference with human rights, their restriction and impossibility of realization. The validity and legitimacy of such restrictions are the subject of serious discussion for all structures of civil society. Analysis of research by Ukrainian legal scholars gives grounds to speak about the lack of theoretical and legal generalizations and conclusions about the mechanism for legal regulation of situations similar to the current ones. The practice of applying the current legislation of Ukraine has shown its loopholes and deficiencies. This has called into question the legitimacy of a number of measures. It can be predicted that the law-making and law-enforcement practices of recent months related to human rights restrictions will be the subject of analysis from various perspectives:

- by sociologists and political scientists – in terms of the influence on the functioning of civil society, the state and the political system of Ukraine;
- by legal scholars – in terms of a study of the proportionality, validity and legitimacy of the measures taken;
- by human rights defenders – in terms of substantiating violations of rights and appeals to the court to restore the violated rights and receive compensation for damage;
- by the judicial system – in the context of legal assessments of specific situations;
- by lawmakers – in order to make changes and amendments to legislation, etc.

The result of joint work should ultimately be the improvement of the legislative mechanism for the protection of life and health of the population of the state from dangerous infectious diseases.

4. CONCLUSION

To counter the spread of COVID-19 coronavirus in Ukraine, the authorities have introduced quarantine measures throughout the country and declared an emergency situation. The objective global picture of the spread of the disease has led to the introduction of special quarantine meas-

ures, some of which have limited the ability of citizens to exercise a number of constitutional rights. The legitimacy and validity of restrictions on human rights are extremely important for the existence of democracy and the rule of law. In Ukraine today, the issue of compliance with the formal and legal grounds for imposing such restrictions is hotly debated. Despite the objective justification of the application of such measures, the procedure for their implementation does not fully comply with the international legal framework for the regulation of human rights and the Constitution of Ukraine. Such restrictions would be absolutely legal in a state of emergency, which the Ukrainian authorities did not impose in the current socio-political conditions. The current situation has also shown a number of deficiencies in the corresponding legislative regulation and the need to improve it.

REFERENCES

- Agrawal, V. K. (2007). Pandemic Response and International Health Regulations. *Medical Journal Armed Forces India*, 63 (4), 366-367. [https://doi.org/10.1016/S0377-1237\(07\)80018-9](https://doi.org/10.1016/S0377-1237(07)80018-9)
- Baker, M. G., & David, P. F. (2006). Global Public Health Surveillance under New International Health Regulations. *Emerging Infectious Diseases*, 12 (7), 1058–1065. doi: 10.3201/eid1207.051497
- Barak, A. (2012). *Proportionality: Constitutional Rights and their Limitations*. New York: Cambridge University Press. <https://doi.org/10.1017/CBO9781139035293>
- Christoffersen, J. (2009). *Fair Balance, Proportionality, Subsidiarity and Primarity in the European Convention on Human Rights*. Leiden/Boston: Martinus Nijhoff Publishers. <https://doi.org/10.1163/ej.9789004170285.i-670.2>
- Dakhova, I. (2018). Obmezhenia realizatsii prav i svobod liudyny: konstytutsiine rehuliuвання ta praktyka Yevropeiskoho Cudu z prav liudyny [Limitation of the Implementation of Human Rights and Freedoms: Constitutional Regulation and Practice of the European Court of Human Rights]. *Forum Prava*, 4, 17–25. <http://doi.org/10.5281/zenodo.1467599>
- Gostin, L., & Berkman, B. (2007). Pandemic influenza: ethics, law, and the public's health. *Administrative Law Review*, 59 (1), 121–175.
- Information Document: Respecting democracy, rule of law and human rights in the framework of the COVID-19 sanitary crisis (2020). Retrieved from <https://www.coe.int/en/web/portal/-/coronavirus-guidance-to-governments-on-respecting-human-rights-democracy-and-the-rule-of-law>
- Kovaliv, M., Rutar, A., & Pavlyshyn, Yu. (2015). Poriadok i pidstavy vvedennia pravovoho rezhymu nadzvychainoho stanu [The order and the grounds of the legal regime of emergency state]. *The Scientific Bulletin of Lviv State University of Internal Affairs: legal series*, 2, 180–188.
- Typovi porushennia prav liudyny predstavnykamy orhaniv pravoporiadku v khodi vprovadzhennia karantynnykh obmezen: Periodychnyi zvit [Typical human rights violations by law enforcement agencies during the implementation of quarantine restrictions: Periodic report] (2020a). Retrieved from https://drive.google.com/file/d/1m0j6VjLMyMQSArLKZ8nja6Flc3_i0CvD/view
- Typovi porushennia predstavnykiv orhaniv pravoporiadku pid chas zaprovadzhennia karantynnykh obmezhuvalnykh zakhodiv: Periodychnyi zvit [Typical human rights violations by law enforcement agencies during the implementation of quarantine restrictions: Periodic report] (2020b). Retrieved from <https://drive.google.com/file/d/1581Cs7tW6mQcCzmZ59nysVROF-IEUeuYL/view>
- Von Bogdandy, A., & Villareal, P. (2020). International Law on Pandemic Response: A First Stock-taking in Light of the Coronavirus Crisis. Max Planck Institute for Comparative Public Law & International Law, Research Paper No. 2020-07. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3561650

THE COVID-19 PANDEMIC – AN IMPEDIMENT IN PERFORMANCE OF CONTRACTS

Mohammed Zaheeruddin¹ 

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Abstract: *The COVID-19 pandemic has created unprecedented situation all over the world, compelled the governments to declare lockdown, closing of businesses, industries, commercial activities, ban on certain imports and exports. Under these circumstances, an obligor may not be able to perform his contractual obligations, consequently may result in breach of contract. In case of claim of damages by the obligee for breach of contract, the obligor may seek exemption from damages under the law of impediment or force majeure. According to Article 79 of the UN Convention on Contracts for the International Sale of Goods 1980 (CISG), a party is not liable for damages due to non-performance, delay or defect in performance, if he can prove that the failure was due to an impediment beyond his control. The COVID-19 situations are beyond the control of the parties to the contract, must be considered as an impediment or force majeure and the non-performing party is entitled for exemption from damages under Article 79 of CISG.*

Keywords: *COVID-19, UN CISG, Impediment, Force majeure, Damages.*

JEL Classification K12

✉ Z_Mohammed@uaeu.ac.ae

¹ College of Law, United Arab Emirates University (UAEU), Al Ain, United Arab Emirates, P.O. Box No. 15551

1. INTRODUCTION

The Corona Virus disease 2019 (COVID-19), designated as pandemic by the World Health Organization² devastating the whole world, death of hundreds of thousands of people, resulting lockdown of nations all over the world, closure of industries, manufacturing units, businesses places, stoppage of all kinds of transport, supply chain disruption, effect on imports, exports and loss of employment to the millions of people around the world.

COVID-19 situation continues to severely affect public health and cause unprecedented disruptions to economies and labour markets.³ Under these circumstances there has been continuous uncertainty in performance of contractual obligations by the parties in domestic as well as in international trade contracts. The COVID-19 situation and its consequences are outside the sphere of control of parties to the contract, may result in failure to perform contractual obligations and consequently result in breach of contract. In order to deal with such situations and to exempt a non-performing party from liabilities, national legislations recognized the rule of impossibility of performance of contract due to any reason beyond the control of a party to the contract.⁴

The object of this paper is to justify that the existing COVID-19 situation and its consequences constitute an impediment, outside the control of a parties to the contract and any non-performance of contractual obligations are entitled for exemption from damages under the United Nations Convention on Contracts for the International Sale of Goods 1980 (UN CISG) (Vienna Convention, 1980). In this regard reference has been made to some national legislation, with special focus on UN CISG and decided case law.

In common law systems rule of impossibility is known as doctrine of frustration of contract, and in civil law systems known as *force majeure*. The concept of *force majeure* is some kind of impracticability and generally refers to „superior forces” or circumstances that are „beyond the control and without the fault or negligence” of the non-performing obligor.⁵ The rule of exemption from damages due to the reason beyond the control of a party has been recognized under different national legislations and Article 79 of UN CISG.

2. IMPEDIMENT RULE UNDER NATIONAL LAWS

According to the United States Uniform Commercial Code (UCC), if there is non-delivery or delay in delivery of goods, in whole or in part by a seller, he is not in breach of his duty if the performance was not practicable due to occurrence of contingency events.⁶ Similarly, the German Civil Code (BGB) provides that a claim for performance is excluded to the extent that performance is impossible for the obligor or for any other person.⁷

² <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic>.

³ https://www.ilo.org/wcmsp5/groups/public/dgreports/dcomm/documents/briefingnote/wcms_743146.pdf, last visited on 24 June 2020.

⁴ Section 2-615 of the United States Uniform Commercial Code (UCC); Section 275 (1) of German Civil Code (BGB); Article 1256 of the Italian Civil Code; Section 56 of the Indian Contract Act, 1872; Section 27 (1) of the Swedish Sale of Goods Act 1987; section 7 of the United Kingdom the Sale of Goods Act 1979.

⁵ Jennifer M. Bund (1998). *Force Majeure* Clause: Drafting advice for the CISG Practitioner, 17 *J.L. & Com.*, 381.

⁶ Section 2-615.

⁷ Section 275 (1).

According to the Italian Civil Code an obligation is extinguished when its performance becomes impossible for a cause not attributable to the obliged party.⁸ An obliged party who does not exactly perform the obligation due is liable for damages, unless he proves that the non-performance or delay was due to impossibility of performance for a cause not attributable to it.⁹

The Indian Contract Act, 1872 contains a rule that an agreement to do an act impossible in itself is void. If an act after the contract becomes impossible, becomes void when the act becomes impossible or unlawful.¹⁰ Similarly, in United Kingdom the Sale of Goods Act 1979 provides that where there is an agreement to sell specific goods and subsequently the goods, without any fault on the part of the seller or buyer, perish before the risk passes to the buyer, the agreement is avoided.¹¹

The Swedish Sale of Goods Act 1987, provides that the buyer is entitled for damages for losses that he suffered because of the seller's delay in delivery, unless the seller able to prove that the delay was due to an impediment beyond his control. Further, the seller must prove that he could not reasonably be expected to have taken into account the impediment at the time of the conclusion of the contract and whose consequences he could not reasonably have avoided or overcome.¹²

The UNIDROIT Principles 2016 under the *force majeure* rule provides that the non-performance by a party is excused if that party establishes that the non-performance was due to an impediment beyond its control, it was not foreseeable at the time of concluding of contract and not avoidable it or its results.¹³ This rule is similar to impediment recognized in Article 79 of UN CISG.

The reference made to United States, German, Italian, Indian, Swedish national laws establish that a party is not liable for damages where the non-performance happens due to an impediment outside the control of obligor. Similarly, the parties to the international trade contracts governed by UN CISG may seek exemption from damages on the ground of "impediment" under Article 79.

3. IMPEDIMENT UNDER UN CISG

The UN CISG applies for the international sale of goods between the parties from different nationalities and when their respective States have ratified this Convention¹⁴ The general rule under UN CISG is that if the seller fails to perform any of his obligations under the contract or the Convention, the buyer may invoke rights provided in Articles 46 -52 CISG or claim damages as available in Articles 74-77.¹⁵ Similarly, if the buyer fails to perform any of his obligations under the contract, the seller may invoke rights provided in Articles 62-65 CISG or claim damages as recognized in Articles 74-77.¹⁶ However, if the failure was due to any impossibility (temporary or permanent), the obligor/promisor (seller/buyer) is not liable for damages under Article 79 CISG.

Article 79 (1) of CISG exempts the obligor from damages for his non-performance, for which he needs to establish following requirements: (1) the failure to perform was due to an impediment beyond his control; (2) the impediment was such that reasonably not expected to have taken into

⁸ Article 1256.

⁹ Article 1218.

¹⁰ Section 56.

¹¹ Section 7.

¹² Section 27 (1).

¹³ Article 7.1.7.

¹⁴ Article 1 UN CISG.

¹⁵ Article 45.

¹⁶ Article 61.

account at the time of conclusion of the contract; and (3) the impediment could not reasonably be expected to have avoided or overcome it or its consequences.

The other requirements are, party seeking exemption under article 79 clauses (1) or (2) must give notice of impediment and its effect to the other party, otherwise he will be liable for damages for non-performance of the contractual obligations.¹⁷ Article 79 exempts the obligor only from damages claim and not from the other remedies available to the non-breaching party.¹⁸ The exemption under Article 79 sub clauses (1) and (2) from damages is allowed to the non-performing party only during the period that impediment exists.¹⁹

a. Exemption from damages:

Article 79 CISG exemptions are available for non-performance or delayed performance of all or part of any of the obligor's obligations due to any impediment outside the control of promisor.²⁰ The exemption under Article 79 bars claims for (specific) performance against the seller²¹ and once a party invokes article 79 the exemption remains in effect as long as the impediment exists.²²

The exemption is available only from claiming damages; the obligee's rights other than damages remain open,²³ such as request for renegotiation, adaptation of contract or termination of contract. It is not clear under Article 79 whether the exemption of the promisor extends to contractually agreed sums, i.e. liquidated damages and penalties.²⁴ If there is possibility for a party to perform in part, such party should only be excused for the part of the contract it cannot perform and not from the whole obligations.²⁵

(i) Impediment was beyond the control of obligor:

A party claiming exemption under Article 79 must establish that the failure was due to an unpredictable and unavoidable impediment, which lies beyond its sphere of control.²⁶ If the disabling event falls within a seller's sphere of control, the seller will not be protected from liability.²⁷

The impediment claiming by obligor must be unforeseeable and un-manageable risk or an exceptional event.²⁸ Whether an impediment is un-manageable risk or totally exceptional event should be determined objectively from a reasonable obligor's view at the time the contract is to be performed.²⁹

¹⁷ Article 79 (4).

¹⁸ Article 79 (5).

¹⁹ Article 79 (3).

²⁰ Mercedesh Azeredo Da Silveira. (2014). *Trade Sanctions and International Sales: An Inquiry into international Arbitration and Commercial Litigation*, Kluwer Law International, p.242.

²¹ Christoph Brunner. (2019). *Commentary on the UN Sales Law (CISG)*, Kluwer Law International, pp. 560-591.

²² Jennifer M. Bund, *supra* note 5.

²³ Michael Bridge (2nd ed., 2017). *The International Sale of Goods, Law and Practice*, Oxford University Press, p. 596.

²⁴ Ingeborg Schwenzer. (4th ed., 2016). *Commentary on the UN Convention on the International Sale of Goods (CISG)*, Oxford University Press, p. 1149.

²⁵ See Jennifer M. Bund, *supra* note 5.

²⁶ Larry A. DiMatteo. (2015). Contractual Excuse under the CISG: Impediment, Hardship, and the Excuse Doctrines, 27 *Pace Int'l L. Rev.* 258.

²⁷ *Saltwater isolation tank case*, Switzerland 26 April 1995 Commercial Court Zürich, available at: <http://cisgw3.law.pace.edu/cases/950426s1.html>, accessed on 10 May 2020.

²⁸ CLOUT case No.166, Germany 21 March 1996, Hamburg Arbitration proceeding (*Chinese goods case*) available at: <http://cisgw3.law.pace.edu/cases/960321g1.html>.

²⁹ Mark B. Baker, A Hard Rain's A-Gonna Fall. (2004). Terrorism and Excused Contractual Performance in a Post September 11th World, 17 *Transnat'l Law* 1.

If the non-performance is due to impediment within the sphere of obligor, such as financial difficulty, mismanagement, the obligor is not entitled for exemption under Article 79. Among the few instances which fall outside the sphere of obligor are: a severe shortage of raw materials or supplies due to war, embargo, unforeseen shutdown of major sources of supply,³⁰ general strike, ban on imports or exports or similar government restrictions.

State Interventions

The State interventions that prevent a party from performance of its contractual obligations are generally lies outside of the parties' sphere of control.³¹ In principle, it is required that the act of State effectively restricts the freedom of trade or payment, in particular, impedes the delivery of the goods.³² The examples for acts of State are government orders or laws banning of imports or exports, trade sanctions, embargoes, currency exchange restrictions. It remains uncertain whether a State-run or State-owned enterprise can invoke them for its exemption.³³

In *Bulgarian Chamber of Commerce and Industry (Coal case)*,³⁴ the tribunal held that a prohibition on coal exports by the Ukraine Government and equal contribution to the harm by the seller and buyer may constitute an impediment within the meaning of article 79. Similarly, in *National Oil Company v. Libyan Sun Oil Company*,³⁵ the tribunal held that banning imports of Libyan Oil into the US was an act of State, outside the control of a party and constitutes *force majeure*.

In *Harriscom Svenska, AB v. Harris Corporation*,³⁶ the *force majeure* clause enabled a seller to avoid liability for non-performance of a contract due to governmental interference. In *Caviar case*,³⁷ the buyer unable to pay the purchase price to the seller due to the United Nations embargo against Yugoslavia. The arbitral court found that after lifting of the UN sanctions, the buyer was obliged to pay the purchase price to the seller with interest.

If the non-performance was due to any restrictions imposed by the State, the obligor can successfully invoke Article 79 for exemption, provided the impediment should not be present at the time the contract was concluded.

Acts of God

The acts of God sometimes make the performance impossible, such as earthquakes, floods, tsunami, plague, epidemic, pandemic. In cases of act of God, it will have to be carefully examined whether or not the natural phenomenon was foreseeable.³⁸

³⁰ Lisa M. Ryan. (1995). The convention on Contracts for the International Sale of Goods: Divergent interpretations, 4 *Tul. J. Int'l & Comp. L.* 99.

³¹ See Schwenzer *supra* note 24 at 1137.

³² See Christoph Brunner, *supra* note 21 at 560-591.

³³ See Schwenzer, *supra* note 24 at 1137.

³⁴ Bulgaria 24 April 1996 Arbitration Case 56/1995, available at <http://cisgw3.law.pace.edu/cases/960424bu.html>, accessed on 24 June 2020.

³⁵ Final Award on *Force Majeure*, 31 May 1985, YCA 1991 pp. 54 et seq., p. 61, n. 18.

³⁶ 3 F ed 576 (1993).

³⁷ Hungary 10 December 1996, Budapest Arbitration Proceedings, CISG-database, available at <http://cisgw3.law.pace.edu/cases/961210h1.html>.

³⁸ See Schwenzer, *supra* note 24 at 1136.

In *Tradax Export SA v. Andre & Cie SA*,³⁹ due to severe floods Mississippi valley in 1973, there was a domestic shortage of soya beans, therefore, the US Government announced embargo on export of soya beans. The court held that prohibition of export could also be a *force majeure* event and the seller in principle rely on the *force majeure* clause contained in the contracts, because they could not obtain goods of the contract description by exercise of any means reasonably open to them.

The other impossibilities are breakdown of transport, destruction of machinery, fire, explosion, general Strike, terrorist attack, warfare, armed conflicts, in some cases economic impossibility. In *PPG Industries, Inc. v. Shell Oil Company*,⁴⁰ the seller Shell Company failed to perform the contract due to explosion and sought exemption under section 2-615 of UCC. The Fifth Circuit court affirmed the lower court decision and held that the Shell's performance was liable to be excused due to occurrence of contingency i.e. explosion.

Economic impossibility

A change of economic circumstances which is of such gravity that the procurement of the goods would cause the obligor to incur unreasonable costs in relation to the contract price, can justify for exemption under Article 79.⁴¹ For example in *Scafom International BV v. Lorraine Tubes S.A.S.*,⁴² the Belgian Court of Cassation held that the impediment defined in Article 79(1) may include changed circumstances, such as economic hardship that made the performance difficult but not impossible. On appeal, the Belgium Supreme Court held that the unforeseen increase of 70% in the price certainly rise to a serious imbalance, therefore, buyer must renegotiate the contractual conditions.

(ii) Impediment was not foreseeable:

One of the important requirements under Article 79 (1) is that the non-performing party needs to establish that it could not reasonably be expected to have taken the impediment into account at the time the contract was concluded.⁴³ An impediment is foreseeable if the obligor was aware of impediment at the time the contract was concluded. Foreseeability, avoidability, and the possibility of overcoming the impediment must be judged objectively by the standards of a reasonable person in the same situation.⁴⁴

In *CLOUT Case No. 104*,⁴⁵ the Bulgarian buyer failed to open a Letter of credit (LoC) in favour of Austrian seller and claimed that it was due to Bulgarian government order that suspended payment of foreign debts. The tribunal found that the government order was present at the time parties have concluded the contract, it was a foreseeable impediment, and therefore, the buyer committed a breach of contract.

If the non-performing party should have known of the circumstances of his disablement, Article 79 does not exempt from liability. In *Malaysia Dairy Industries Pte. Ltd. v. Dairex Holland BV*,⁴⁶ the seller knew the restrictions in buyer's country at the time of concluding the (revised) agreement, therefore, such restrictions cannot be considered as *force majeure*.

³⁹ 1976] 1 Lloyd's Rep. 416.

⁴⁰ 919 F. 2d. 17 (5th Cir. 1990).

⁴¹ See Schwenzer, *supra* note 24 at 1142.

⁴² Hof van Cassatie, Belgium, 19 June 2009.

⁴³ See Mercedeh Azeredo Da Silveira, *supra* note 20 at 223.

⁴⁴ Christoph Brunner. (2019). *Impediment excusing a party from damages, Commentary on the UN Sales Law*, Kluwer Law International, p. 584.

⁴⁵ ICC Arbitration, 1992, Court of Arbitration of the International Chamber of Commerce, Case No. 7197, 1992, available at <http://cisgw3.law.pace.edu/cases/927197i1.html>, last accessed on 24 June 2020.

⁴⁶ Netherlands 2 October 1998 District Court's -Hertogenbosch, available at <http://cisgw3.law.pace.edu/cases/981002n1.html>, accessed on 10 May 2020.

An impediment was avoidable, if the performance of contract is possible by alternate or substituted methods, like change of transport route, purchase material from other sources, making payment through alternate method.

b. Conditions for seeking exemption due to failure of third parties:

Article 79 exempts the obligor (seller or buyer) due to non-performance of third parties whom the obligor has engaged to perform the whole or part of the contract.⁴⁷ An exemption in Article 79 (2) is possible if the grounds for the exemption cumulatively met by both the obligor himself and the third party.

Article 79(2) encompasses independent third parties who take over performance for the seller or buyer either entirely or in part on their own responsibility.⁴⁸ The third parties may be carriers, shippers, banks, sub-contractors. In contract performance procurement of goods falls within the obligor's risk; therefore, sales representatives, suppliers and sub-suppliers are not third parties, within the meaning of Article 79 (2), as they do not perform independent obligations which the seller himself owes to the buyer. However, an exemption may be possible if the supplier has monopoly over business and seller has no other choice or source to procure the goods.

In *Raw Materials, Inc. v. Manfred Forberich GmbH & Co., KG*,⁴⁹ the seller (Forberich) failed to supply Russian railroad rail to the buyer (RMI) due to failure of its supplier and unable to ship because the port of St. Petersburg unexpectedly frozen. The defendant contended that the impediment was foreseeable and not entitled for exemption under UCC 2-615 which is similar to Article 79 of CISG. The District Court denied defendant's motion for summary judgment and held that Forberich's non-performance was justified due to *force majeure*.

In cases where third parties are involved in supply or procurement, if the obligor would like to protect himself from damages due to the non-performance of his suppliers, he may do so by adding a clause in contract stating that his performance is subject to performance of supplier/s.

c. Duration of exemption:

The exemption provided under article 79 has effect for the period during which the impediments exists,⁵⁰ once the impediment ceased to exist, in good faith the obligor must perform the contract, otherwise, he is liable for damages. The temporary impediment is considered as an extra time, granted for such performance and during impediment time the obligor's right to require performance or to claim damages is suspended.⁵¹

d. Notice of impediment to the other party:

The obligor who fails to perform his contractual obligations must give notice to the obligee of the details of impediment and its effect on his ability to perform the contract.⁵² If the obligor failed to serve notice to the obligee within a reasonable time, after he knew or ought to have known of the impediment, the obligor is liable for damages to the obligee for not providing notice of impediment.

⁴⁷ Article 79 (2).

⁴⁸ See Christoph Brunner, *supra* note 21 at 560-591.

⁴⁹ 2004 U.S. Dist. Court [Illinois], July 6, 2004.

⁵⁰ Article 79 (3).

⁵¹ Christoph Brunner. (2008). *Force Majeure and Hardship under General Contract Principles: Exemption for Nonperformance in International Arbitration*, International Arbitration Law Library, Vol. 18, Kluwer Law International, p. 246.

⁵² Article 79 (4).

e. Article 79 (1) & (2) exempts only from damages:

Article 79 CISG exempts the non-performing party only from damages; it does not prevent obligee from invoking any other right other than claiming damages.⁵³ The obligee may resort for other remedies such as, grant extra time for performance, request for renegotiation of contractual terms and adaptation of contract or terminate the contract.

f. Burden of Proof:

The reading of Article 79 suggests that the party seeking exemption (obligor) must prove that the failure was due to an unforeseeable impediment which is beyond his control. For example, if a seller claims exemption from damages, he bears the burden of proof.⁵⁴

In cases where the performance of the contract would involve a danger to life or health for the obligor or third parties, such circumstances can be considered as an impediment. If an internal disruption can be traced back to an external source, such as an epidemic illness of the entire personnel, a temporary exemption may be contemplated.⁵⁵

4. CONCLUSION

The COVID-19 situation and its consequences are unprecedented; therefore, it needs to be considered as an impediment or *force majeure* and qualifies for exemption from damages under Article 79 of UN CISG or similar rule under national legislation. The COVID-19 situation was not foreseeable for the contracts entered before its spread and its affects are beyond the control of parties to the contract. The party seeking exemption from damages for its non-performance, delay or defect in performance due to COVID -19 situation required to prove that the impediment was beyond the control of an obligor, impediment was reasonably not foreseeable or avoidable or overcome it or its consequences. The parties to the contract for the domestic or international sale of goods avoid damages due to unforeseeable events, by including impediment or *force majeure* clause in contract.

REFERENCES

- Christoph Brunner. (2008). *Force Majeure and Hardship under General Contract Principles: Exemption for Non-performance in International Arbitration*, International Arbitration Law Library, Vol. 18, Kluwer Law International, p. 246.
- Christoph Brunner. (2019). *Commentary on the UN Sales Law (CISG)*, Kluwer Law International, pp. 560-591.
- Christoph Brunner. (2019). *Impediment excusing a party from damages*, *Commentary on the UN Sales Law*, Kluwer Law International, p. 584.
- Ingeborg Schwenzer. (4th ed., 2016). *Commentary on the UN Convention on the International Sale of Goods (CISG)*, Oxford University Press, p. 1149.
- Jennifer M. Bund (1998). *Force Majeure Clause: Drafting advice for the CISG Practitioner*, 17 J.L. & Com. 381.
- Larry A. DiMatteo. (2015). *Contractual Excuse under the CISG: Impediment, Hardship, and the Excuse Doctrines*, 27 Pace Int'l L. Rev. 258.

⁵³ Article 79 (5).

⁵⁴ CLOUT Case No. 596 Germany 2 February 2004, Germany 2 February 2004 Appellate Court Zweibrücken (*Milling equipment case*), available at: <http://cisgw3.law.pace.edu/cases/040202g1.html>.

⁵⁵ See Christoph Brunner, *supra* note 44 at 564.

- Lisa M. Ryan. (1995). The convention on Contracts for the International Sale of Goods: Divergent interpretations, 4 Tul. J. Int'l & Comp. L. 99.
- Mark B. Baker, A Hard Rain's A-Gonna Fall. (2004). Terrorism and Excused Contractual Performance in a Post September 11th World, 17 Transnat'l Law 1.
- Mercedeh Azeredo Da Silveira. (2014). Trade Sanctions and International Sales: An Inquiry into international Arbitration and Commercial Litigation, Kluwer Law International, p.242.
- Michael Bridge (2nd ed., 2017). The International Sale of Goods, Law and Practice, Oxford University Press, p. 596.

Cases:

- Bulgarian Chamber of Commerce and Industry (Coal case), Bulgaria, 24 April 1996 Arbitration Case 56/1995, available at: <http://cisgw3.law.pace.edu/cases/960424bu.html>.
- Caviar case, Hungary 10 December 1996, Budapest Arbitration Proceedings, CISG-database, available at <http://cisgw3.law.pace.edu/cases/961210h1.html>.
- CLOUT Case No. 104, ICC Arbitration, 1992, Court of Arbitration of the International Chamber of Commerce, Case No. 7197, 1992, available at <http://cisgw3.law.pace.edu/cases/927197i1.html>.
- CLOUT case No.166, Germany 21 March 1996, Hamburg Arbitration proceeding (Chinese goods case) available at: <http://cisgw3.law.pace.edu/cases/960321g1.html>.
- CLOUT Case No. 596 Germany 2 February 2004, Germany 2 February 2004 Appellate Court Zweibrücken (Milling equipment case), available at: <http://cisgw3.law.pace.edu/cases/040202g1.html>.
- Harriscom Svenska, AB v. Harris Corporation, 3 F ed 576 (1993).
- Hungary 10 December 1996, Budapest Arbitration Proceedings, CISG-database, available at <http://cisgw3.law.pace.edu/cases/961210h1.html>.
- Malaysia Dairy Industries Pte. Ltd. v. Dairex Holland BV, Netherlands 2 October 1998 District Court 's-Hertogenbosch, available at <http://cisgw3.law.pace.edu/cases/981002n1.html>.
- PPG Industries, Inc. v. Shell Oil Company, 919 F. 2d. 17 (5th Cir. 1990).
- Raw Materials, Inc. v. Manfred Forberich GmbH & Co., KG, 2004 U.S. Dist. Court [Illinois], July 6, 2004), available at <http://cisgw3.law.pace.edu/cases/040706u1.html>.
- Saltwater isolation tank case, Switzerland 26 April 1995 Commercial Court Zürich, available at: <http://cisgw3.law.pace.edu/cases/950426s1.html>.
- Scafom International BV v. Lorraine Tubes S.A.S, Hof van Cassatie, Belgium, 19 June 2009.
- Tradax Export SA v. Andre & Cie SA, [1976] 1 Lloyd's Rep. 416.

Websites:

- <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic>.
- https://www.ilo.org/wcmsp5/groups/public/dgreports/dcomm/documents/briefingnote/wcms_743146.pdf, visited on 18 May 2020.

