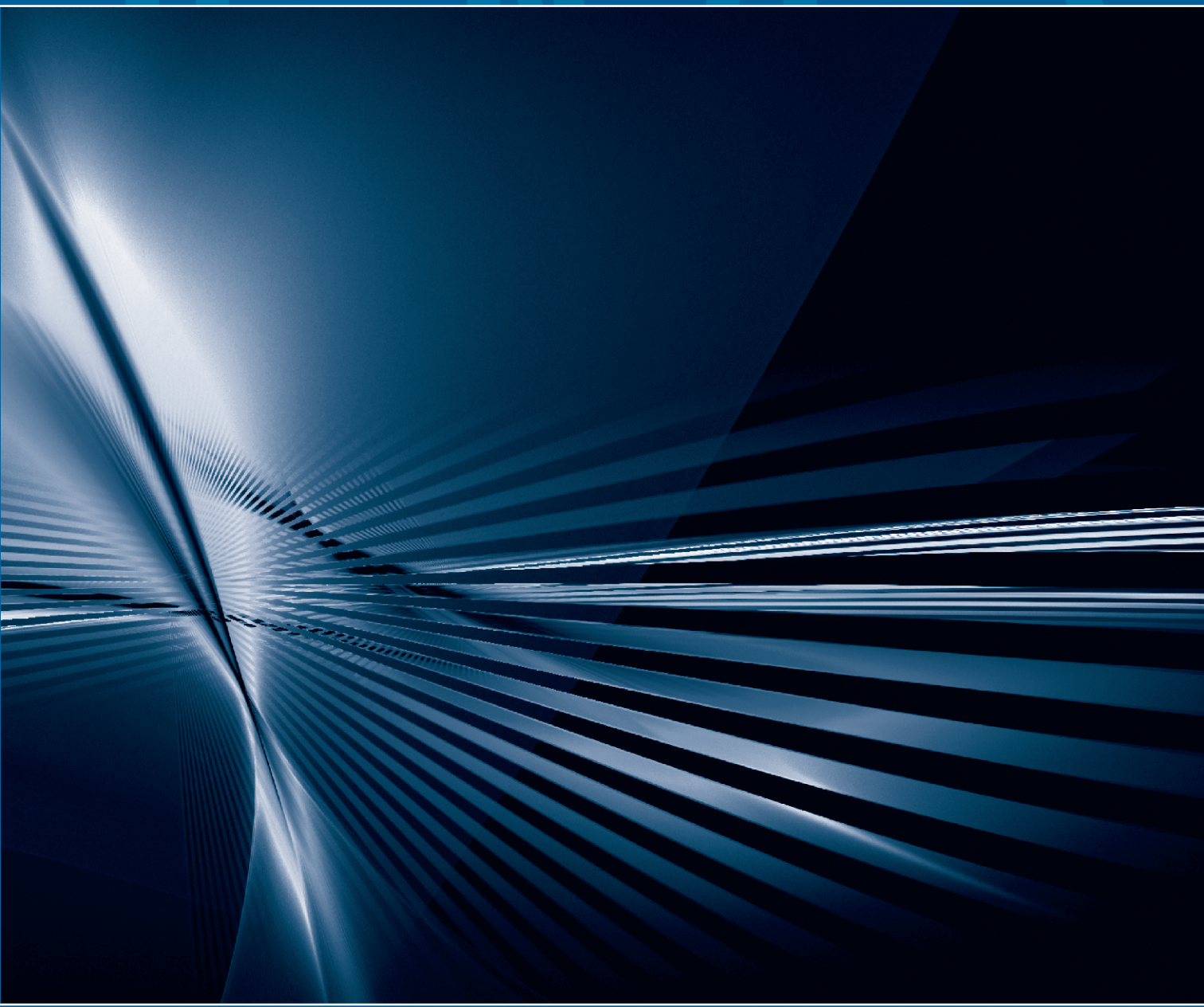
ORGANIZACIJA

Journal of Management, Informatics and Human Resources

Volume 48, Number 4, November 2015

ISSN 1318-5454

Poštnina plačana pri pošti 4102 Kranj



Revija za management, informatiko in kadre

ORGANIZACIJA

Organizacija is an interdisciplinary peer reviewed journal that seeks both theoretically and practically oriented research papers from the area of organizational science, business information systems and human resources management. Topics will be drawn from, but are not limited to, the following areas:

- organizational theory, development and restructuring of organizations;
- new and innovative organizational structures and approaches;
- managerial aspects of quality management;
- organizational behavior;
- human resources management;
- development, restructuring and management of information systems;
- interorganizational systems, electronic commerce;
- decision making, decision support.

In particular, we seek papers which cover state-of-art developments in organizational theory and practice, and present new insights that improve our understanding in the subject area of the journal

Organizacija je interdisciplinarna znanstvena revija, ki objavlja prispevke s področja organizacije, informatike in kadrovskega managementa. Primeri tematskih sklopov, ki jih pokriva revija, so:

- teoretične osnove organizacijskega razvoja ter spreminjanja organizacijskih struktur in procesov
- novi organizacijski pristopi ter njihova uporaba
- organizacijski ukrepi za doseganje večje produktivnosti, ekonomičnosti in rentabilnosti poslovanja in proizvodnje
- management kakovosti
- kadrovanje in izobraževanje kadrov pri prestrukturiranju podjetij
- stimulativnost nagrajevanja v spremenjenih lastninskih razmerah
- prestrukturiranje organizacijskih in informacijskih sistemov
- načrtovanje, razvoj in uporaba informacijske tehnologije in informacijskih sistemov
- medorganizacijski sistemi, elektronsko poslovanje
- odločanje, podpora odločanju, direktorski informacijski sistemi

Vsebina ni omejena na navedene tematske sklope. Še posebej želimo objavljati prispevke, ki obravnavajo nove in aktualne teme in dosežke razvoja na predmetnem področju revije, ter njihovo uvajanje in uporabo v organizacijski praksi.

Organizacija, Volume 48, Number 4
November 2015

Contents 4/2015

Editorial office: University of Maribor, Faculty of Organizational Science, Založba Moderna Organizacija, Kidriceva 55a, 4000 Kranj, Slovenia, Telephone: +386-4-2374295 , E-mail: organizacija@fov.uni-mb.si, URL: http://organizacija.fov.uni-mb.si. Organizacija is co-sponsored by the Slovenian Research Agency.

Published quarterly. Full text of articles are available at http://www.degruyter.com/view/j/orga and http://organizacija.fov.uni-mb.si.

Papers for publication in Organizacija can be submitted via journal website at http://organizacija.fov.uni-mb.si. Before submission authors should consult. Guidelines available at http://www.degruyter.com/view/j/orga. You can contact the editorial office via e-mail: organizacija@fov.uni-mb.si or joze.zupancic@fov.uni-mb.si.

Articles are currently abstracted/indexed in: Cabell's Directory, CEJSH (The Central European Journal of Social Sciences and Humanities), Celdes, CNPIEC, Die Elektronische Zeitschriftenbibliothek, DOAJ, EBSCO - TOC Premier, EBSCO Discovery Service, ECONIS, Ergonomics Abstracts, ERIH PLUS, Google Scholar, Inspec, International Abstracts in Operations Research, J-Gate, Microsoft Academic Search, Naviga (Softweco), Primo Central (ExLibris), ProQuest - Advanced Pol mers Abstracts, ProQuest - Aluminium Industry Abstracts, ProQuest - Ceramic Abstracts/World Ceramics Abstracts, ProQuest - Composites Industry Abstracts, ProQuest - Computer and Information Systems Abstracts, ProQuest - Corrosion Abstracts, ProQuest - Electronics and Co mmunications Abstracts, ProQuest - Engineered Materials Abstracts, ProQuest - Mechanical & Transportation Engineering Abstracts, ProQuest - METADEX (Me tals Abstracts), ProQuest - Sociological Abstracts, ProQuest - Solid State and Superconductivity Abstracts, Research Papers in Economics (RePEc) , Summon (Serials Solutions/ProQuest), TDOne (TDNet), TEMA Technik und Management, WorldCat (OCLC)

DOI: 10.1515/orga-2015-0019

Coopetition Effect Determinants: Competitor's Size, Geographical Scope, Market and Technological Positions

Joanna Cygler[1], Katarzyna Dębkowska[2]

[1]Warsaw School of Economics, Institute of Management, 162 Niepodległości, 02-554 Warsaw, Poland
cygler@sgh.waw.pl

[2]Bialystok University of Technology, Faculty of Management, 2 Tarasiuka, 16-001 Kleosin, Poland
k.debkowska@pb.edu.pl

Background and Goal: The article is aimed at conducting an empirical analysis of the value and significance of coopetitors' attributes thanks to which coopetition, which is a combination of cooperation and competition between competitors, generates a substantial corporate profit. Four major competitors' attributes have been analysed: its size, geographical scope, market and technological position. The research also includes the Porter's value chain.
Design/ Methodology/Approach: The survey has been conducted on a sample of 235 high- tech companies operating in Poland and involved in coopetition. The sample is representative. The data have been collected at interviews with company top executives or owners. The research applies the method of classification trees, which, thanks to diagrams, sequentially divides the examined data space into classes (spaces) of similar properties. The assessment of the effect of coopetition, including its variants, made by the examined company served as a dependent qualitative variable. Four coopetitor's attributes and their variants were assumed as explanatory variables (predictors) affecting the assessment of cooperation.
Results: The results of research indicated the necessity for an accurate competitor's profile selection. The significance of each of the four attributes may be different depending on the undertaken areas of cooperation with a competitor. The value of all the attributes of competitors is also diverse depending on the area of cooperation. A selected competitor's profile with regard to the four analysed attributes may become a stimulant to generate benefits in one area, while in another area it may become an inhibitor.
Conclusions: So far, the selection of a coopetition partner has been treated universally, without scrutinizing on some specific needs in relation to the area of cooperation. The selection of an appropriate coopetitor's profile will allow for the cost reduction in search of appropriate candidates for cooperation and in relations management.

Keywords: *coopetition, effects, competitor's attributes, classification trees*

1 Introduction

*You have to kiss a lot of frogs to find a prince***.** It is one of the most popular quotations in business or scholarly economic literature (Rodan, 2002; Grisham, 2006). The primary inspiration of the message is referred to the Grimm brothers' fable entitled *"The Frog Prince, or Iron Henry"* (1812). However, there is some reference to fairy tales and myths from all over the world, e.g. Hungary, England or Korea. The quotation about frog kissing is most often used to illustrate the complexity of search for complementary resources strategically significant for the corporate growth due to the selection of partners for cooperation (Matthews, 1991). Aware of the time pressure and the difficulty to thoroughly assess partnership candidates, companies increasingly tend to reduce the number of candidates for cooperation in order to reduce the cost of identification and selection of appropriate organisations. It is becoming particularly important to pursue the search among competitors with which the companies are to create coopetitive

Received: June 10, 2015; revised: July 27, 2015; accepted: August 30, 2015

relations, i.e. combining a simultaneous cooperation and competition among rivals (Bengtsson and Kock, 2000). The complexity of coopetition contributes to considerably higher costs of selection and consequences of mistakes with regard to the preferences for cooperation with the rival than in other inter-organisational relations.

The article is meant to indicate competitors' attributes in favour of coopetitive relations to bring substantial benefits to the selector. The analysis has been made in four major areas: competitor's size, market and technological positions, and geographical scope. These breakdowns are considered from the perspective of the Porter's value chain. It allows for the creation of the partners' profiles on the basis of which companies should make coopetition selections depending on the adopted value chain. Thanks to the selected desired profiles of candidates for coopetition, companies make a selection from a considerably less numerous groups of candidates, which decisively raises the probability of coopetition success. 235 high-tech companies operating in Poland have been analysed. The research makes use of one of multidimensional methods of statistical analysis, namely: the method of classification trees.

2 The coopetition concept

Coopetition belongs to the group of inter-organisational relations burdened with the highest costs (Lado et al., 1997). It results, for example, from the contradictory logic of activities: based on trust as well as conflict. In coopetition, trust is perceived in three dimensions: calculation (trust is based on calculation), understanding (trust is based on knowledge) and personal involvement (trust is based on identification), (Lane and Bachmann, 1998). They are subject to change in the process of coopetition relations between parties. The trust and common interests create the basis for efficient cooperation (Brito and Costa de Silva, 2009). Thanks to this, there is a growing tendency to contacts and mutual concessions (Harris and Dibben, 1999). On the other hand, the competition stream results from the fight for limited heterogeneous resources and from the race to win the same customers' favours (Brandenburger and Nalebuff, 1996).

Coopetitive behaviours are most often examined in the context of corporate relations. And coopetition is often regarded as an immanent element of corporate growth strategy (Dagnino, 2009). There are also analyses of simultaneous streams of cooperation and competition at the internal organisational level, in particular in transnational corporations (Luo, 2005; Luo et al. 2006; Slotegraaf and Tsai, 2002), individual people (Colley et al., 1985; Lu and Argyle, 1991; Simmons et al. 2001; Ross et al. 2003; Geraudel and Salvetat, 2014) and networks (Cygler 2010; Gnyawali and Madhavan, 2006, 2001; Bengtsson and Kock, 2000).

Coopetition is most frequently interpreted from the perspective of three theoretical trends: game theory, transaction cost theory and resource approach.

In game theory, coopetitive relations are treated as a positive-sum-game, i.e. creating the opportunity for all players to gain benefit. Coopetition is based in game theory on the classical analysis of the prisoner dilemma (Mayberry et al., 1992). In order to reduce opportunistic behaviours when solving the prisoner dilemma, a *tit for tat* strategy is employed (Axelrod, 1984) in pursuit of the principle of reciprocity of players, which encourages them to think strategically while executing individual movements. The coopetition activities are affected by the structure of payments, time horizon of activities and the number of players (Parkhe, 1993).

The inclination of the players to cooperate grows to accompany the growing significance of the *shadow of the future* as well as the stability of relations (Axelrod, 1984). Taking into account the number of players, cooperation relations between competitors lose stability and durability when the number of parties in the system increases. Opportunistic behaviours appear more often, which leads to the free riding strategy. In the game theory model of coopetition PARTS, Brandenburger and Nalebuff (1995, 1996) created the so-called Value Net. Multiple horizontal and vertical relations in the value net generate value added (a pie to be shared). It is considerably larger than in the case of connections within the value net than could be generated as a result of the individual activities of players.

In transaction cost theory, a selection is considered from among three main forms of organisational operation: market transactions, hierarchical structures and hybrid relations (Williamson, 1987). Companies choose coopetitive (hybrid) relations as a response to generating additional transaction costs as a result of market imperfectness (Hennart, 1988; Madhol, 2000) as well as hierarchical structures (Quintana-García and Benavides-Velasco, 2004; Park and Russo, 1996). Coopetition is a hybrid form most heavily burdened with transaction costs. It is caused primarily by the competitive character of competitive cooperation and the rise in uncertainty of the operation of parties as well as the complexity of relations (Chen et al., 2007). The trust among parties is also at a low level, which leads to the creation of so-called opportunistic cooperation (Hill, 1990). The retention of a stream of competitive relations raises the threat of the appearance of conflict situations, which besides opportunism, are a result of free riding activities as well as limited rationality (Selten 1998).

In the resource-based view, companies decide to cooperate with organisations possessing complementary and strategic resources. The cooperation with a company, which is also a competitor, possessing both supplementary and complementary resources allows for the generation of benefits arising from the synergy effect of the shared resources being the object of cooperation and the resources at

the company's disposal (Chetty and Wilson, 2003; Clarke-Hill et al., 2003). A limited access to deficit resources on the part of companies outside the relations is an advantage of coopetition (Das and Teng, 2000). Coopetitive relations are also established to jointly create resources: to develop new technologies, to create or jointly acquire information and knowledge and to gain coopetition competence (Heimeriks and Duysters, 2007).

Besides the three abovementioned major theoretical concepts, coopetition issues are more and more often examined from the angle of the achievements of the network theory (Gnyawali and Madhavan, 2001; Gnyawali et al., 2006; Lechner et al., 2006; Bentsson and Kock, 2000; Peng and Bourne 2009). There are also references to philosophy (Doz and Hamel, 1998; Luo, 2004), biology (Cygler, 2015) and law (Geradin, and McCahery, 2005; Levin and McDonald, 2006). Despite the diversity of scientific inspirations allowing for the analysis of the complexity of coopetition, the state of knowledge of this phenomenon should be considered to be going through a state of transition (Edmonson and McManus, 2007; Soppe et al., 2014).

3 Selection of coopetition partners

The literature on coopetition more and more often deals with the key success factors of these relations (Chin et al. 2008). One of them is the selection of coopetitors. Due to the relative novelty of coopetition issues and the early stage of development of research of these relations, the questions of attributes and criteria of selecting coopetitors are based primarily on the literature on alliances and networks (Cygler, 2010; Gulati, 1999, Clarke-Hill et al., 2003). The research on alliances indicates that 50 % of them failed and, after 10 years of cooperation, the percentage increases to 80% (Aldrich and Auster, 1986). Coopetitive relations generate a higher level of transaction costs, which makes this percentage grow. Thus, the selection of an appropriate coopetitor is becoming an increasingly significant or even a key factor for the success of relations between parties (Cullen et al., 1995).

Due to the complex structure of coopetitive relations, the selection of a partner has a multicriteria character. The literature considers the issue of coopetition partners` selection in terms of relationship factors. It is most often indicated that coopetition is successful if the relations generate mutual benefits (positive-sum-game), mutual trust, commitment and communication management (Shah and Swaminathan, 2008; Akdoğan et al., 2015; Chin et al. 2008). And Geringer (1991) divided the criteria into two groups: task related (operation related: tangible and intangible assets with a special focus on know-how, financial resources, skills, access to distribution channels) and partner related (cooperation related: corporate culture, trust between partners, size and structure of the partner). This division combined relationship factors with strategic attributes of partner selection (Glaister and Buckley, 1997).

The resource-based view regards resource complementarity as one of the most important partner selection criteria. This allows for the collective creation of value (Ohmae, 1989; Hitt et al., 2000; Ritala and Hurmelinna-Laukkanen, 2009, Ritala et al. 2014). And the research conducted by Akdoğan et al. (2015) indicated the possession of supplementary resources as a very important factor making a competitor eligible for cooperation.

Despite the growing interest of researchers in coopetition partner selection, particular attention is focused on relationship factors. However, considerably less attention is paid to coopetitors' strategic attributes (Luo, 1998). More and more significance is ascribed to such attributes as the partner's size and its market position, geographical scope and technological position.

The factors connected with the coopetitor's size are becoming increasingly popular in the literature on management, although it presents divergent opinions. It indicates that cooperation with a comparable, or a smaller, partner allows for successful competition against a larger competitor (Gnyawali and Park, 2009) and points to easier control and relationship management (Soppe et al., 2014). In addition cooperation with a larger coopetitor allows for taking advantage of its experience (Alvarez and Barney, 2001, Glaister and Buckley, 1997; Stern, 2005; Gulati, 1999).

The criterion of market position is becoming more significant in the case of transnational coopetition relations. The global players pay attention to the market position of their local partners in order to take advantage of their knowledge of the market and the development possibilities arising i.e. economies of scale, access to distribution channels, favourable position in the business ecosystem, (Luo, 1997, 1998, and 2004). The market position gains significance in the case of coopetition in emerging markets, where the value of risk as well as investment attractiveness are placed on a higher level.

The coopetitor's geographical scope is connected with its foreign experience, cultural flexibility, application of modern management methods and market experience from different geographical areas, which results in a higher degree of communication efficiency and growing trust (Luo 1997). Thus, companies prefer cooperation partners with a broader geographical scope as the coopetition management costs decline.

The corporate technological position is related to the company's innovation capabilities (Brown and Eisenhardt, 1997), technological skills and commercialisation competence with regard to new technological solutions. This criterion is increasingly important in relation to the coopetition partner selection in technologically advanced sectors and shorter product life cycles force companies into involvement in considerable innovativeness which exceeds the financial and organisational capabilities of a single company (Bouncken and Kraus, 2013).

The choice of four criteria, indicated above, stems from the fact that they are perceived as sensitive by both researchers and managers. This means that they are regarded as crucial in the initial partner selection for cooperation. Therefore, the paper is focused mainly on these criteria as the most fundamental, as well as the most differentiating, of the cooperation effects between rivals. However these attributes should not be regarded as sufficient for a partner proper selection, but rather as necessary ones.

The literature on coopetition discusses the problem of selection of partner's attributes without defining the object of cooperation between competitors. It is intuitively assumed that the volatility of significance and value of competitor's attributes depending on the coopetition area is a characteristic feature of the coopetitor selection complexity. This arises from the diversity of expected benefits and threats, and as a consequence, different coopetitor's attributes. This means that the relevance of coopetition candidate's attributes changes depending on the area of cooperation. Therefore, in the course of research two hypotheses are to be verified.

H_1: The significance of coopetitor's attributes connected with its size, market and technological positions as well as geographical scope is diversified depending on the area of a company's cooperation with its competitor.
H_2: The value of coopetitor's attributes connected with its size, market and technological positions as well as geographical scope is diversified depending on the area of a company's cooperation with its competitor.

The hypotheses verification is based the data derived from the surveyed sample. They were analysed through the classification trees method. In this way, a ranking of coopetitor's attributes in all the areas was created. This allowed for the verification of hypothesis H_1. Furthermore, the application of this method allowed for the division of the examined companies into groups depending on the assessment of the cooperation with the competitor in all the areas. Belonging to the groups is based on coopetitor's attributes value indicated by the interviewed companies, which allowed for the verification of hypothesis H_2.

4 Methodology

4.1 Data description

A multi-stage research was conducted at the end of 2012 and beginning of 2013. As a result, a group of 235 high-tech companies involved in coopetition was selected. The selection of the research sample was affected by the characteristics of the sector and the universality of coopetitive relations created within it. All the data were collected directly in questionnaires. The respondents were company top executives or owners. The selection of the research sample was conducted at several stages. The high-tech sector was defined according to the OECD classification (2003). The surveyed companies were classified into seven basic industries: processing and manufacturing (16 companies), pharmaceutical sector (79), production of office equipment and computers (4), production of TV, radio and communication equipment (31), medical equipment production (54), spaceship production (16), and high-tech services (35). With regard to the size, the majority are small companies (130), followed by medium-sized (72) and the least numerous group includes large companies (33). Taking into account the organisational form, there are: 171 stand-alone companies, 49 – corporations, 13 – holdings and 2 – others. The majority of the analysed companies are domestic organisations (165) and the rest of them (70) operate on a transnational scale. The sample meets the requirements of representativeness of the population of companies operating in the high-tech sector in Poland.

4.2 Measures/Variables

The research applied the method of the so-called classification trees, which thanks to diagrams used, sequentially divides the examined data space into classes (spaces) of similar properties (Breiman et al.1993; Quinlan, 1993; Lewis 2000). The classification trees` methods have a wide application in management science, in particular in marketing: in the research connected with the acquisition of new buyers, churn analysis, fraud detection and questionnaire data analysis. The advantage of the classification trees' method results from the ability to present the most complex solutions (Breiman et al. 1993). The complexity of solutions is reflected in the structure of the classification tree itself. It consists of the root (the beginning of the recursive process), branches (connections between the root and following nodes), nodes (parent node – superior and child node – subordinate) and leaves (nodes in which there is no further splitting of data subspace).

The leaf node includes information about the classification of data in the subspace in a definite class. In every node a certain condition is checked (depending on the type of tree) with regard to a given observation and on its basis one of the branches leading to the next, situated below, node is chosen. The idea of developing a classification tree is to obtain a tool (model) allowing for the classification of future observations whose belonging to a definite class is not known.

The created tree is a predictive and descriptive model allowing for the description and presentation of patterns in a given set (Rokach, 2008). The process of tree building is based on the basis of recursive splitting (Kotsiantis, 2007), where in every next node another independent variable may be used. At every stage, all predictors (variables) are analysed and the one that allows for obtaining the most

homogeneous subgroups is to make selection (Loh and Shih, 1997).

The split in a node is effected only on the basis learning trial vectors which reached the node and consists in the best (in a definite sense) split of this subtrial into two parts (in the case of binary trees), transferred to descendants (e.g. from parents to children, Esposito et al., 1997). There should be such a split so that the diversity of the obtained elements of the dataset reaching the descendants would be reduced to a minimum. The split pursuit requires an appropriate measure of class diversity in the node. From among a number of diversity measures used in the process of creation of classification trees, some typical measures used for binary trees may be indicated (Loh and Shih 1997):

- Gini index: $Q = 2p(1 - p)$ (1)
- entropy ratio: $Q = -p\log_2(p) - (1 - p)\log_2(1 - p)$ (2)

where p means probability of belonging to one of the classes.

Classification trees may be used to determine the belonging case to the quality class of a dependent variable on the basis of measuring of one or more explanatory variables (predictors), which may also be qualitative variables (Piccarreta, 2008). The assessment of the competitive cooperation made by the examined company is assumed as a qualitative variable.

The variants of this variable are: significant benefit, poor benefit, zero effect and loss. The explanatory variables (predictors) affecting the assessment of cooperation are four qualitative variables: partner's size (with variants: larger, smaller and comparable with the examined company), partner's technological position (with variants: stronger, weaker and comparable), partner's market position (with variants: stronger, weaker and comparable) and competitor's geographical scope (with variants: local/regional, domestic/national and international). The classification trees were constructed through the application of these variables in the value chain as the cooperation area: R&D, input supply, production/services, sales/distribution, marketing, logistics, finance, IT and human resources. As a result, nine classification trees were obtained to breakdown the companies with regard to the cooperation effect in a given area depending on the competitor's attributes. The application of the classification trees method was preceded by the analysis cooperation assessment breakdowns in the area of coopetitive relations (Table 1).

From among 235 examined companies, the majority declared cooperation in at least two value chain areas. The analysis of breakdowns of cooperation effects indicates that there are differences in the assessment of competitive cooperation effects in particular areas. In order to confirm this thesis, verification was made of the hypothesis of the lack of differences in assessment of cooperation effects in the analysed areas through the Kruskal-Wallis test. The achieved level of the test amounted to 46.19932 as well as level $p = 0.0000$. These results indicate that the hypothesis of the lack of differences in assessment in coopetition areas is to be rejected. Thus, the examined companies are substantially different in their assessment of the effects in various areas of cooperation.

5 Findings and discussion

The method of classification trees was used in order to classify the examined companies in all the areas of cooperation taking into account the effects of competitive cooperation as well as their corporate attributes: competitor's size, technological and market positions, and geographical scope. Additionally, this method allowed for the determination of significance of particular predictors (competitor's attributes) with regard to the area of cooperation (Table 2).

Table 1: Assessment of competitive cooperation in different areas. Source: own calculations.

Area of competitive cooperation	Effects of competitive cooperation				
	Significant benefit	Poor benefit	Zero effect	Loss	Total
R&D	30	39	15	5	89
Input supply	43	42	18	6	109
Production/Services	66	46	18	0	130
Sales/ Distribution	48	49	12	4	113
Marketing	22	31	20	0	73
Logistics	16	35	15	8	74
Finance	9	27	16	8	60
Computer information systems	26	31	21	0	78
Human Relations	15	28	12	3	58

Table 2: Significance of predictors in particular areas of competitive cooperation and prediction accuracy. (The significance of predictors is presented on the scale from 0 to 100). Source: own calculations.

Area of competitive cooperation	Preference for partner's size	Preference for partner's technological position	Preference for partner's market position	Competitor's geographical scope	Prediction accuracy (%)
R&D	99	73	58	100	60.7
Input supply	100	66	48	92	54.1
Production/Services	66	99	87	100	57.7
Sales/ Distribution	63	81	94	100	57.5
Marketing	86	100	77	99	61.6
Logistics	77	100	67	56	60.8
Finance	87	57	100	86	61.7
Computer information systems	87	100	70	68	62.8
Human Relations	75	81	100	60	65.5

Depending on the area of competitive cooperation differences may be observed in the significance of preferred coopetitor's attributes. In the areas of R&D and input supply, definitely the most significant preferences are those for both the competitor's size and geographical scope. In areas like production/services and marketing, the most significant preferences in coopetition are those for coopetitor's technological and market position. In sales/distribution, competitor's geographical scope and its market position are the most relevant attributes. In the areas of logistics and IT, there is one decisively relevant preference for partner's technological position. In addition, in the areas of finance and human resources the most important issue is the competitor's market position.

The analysis of the significance of preferences in particular areas cannot let it go unnoticed that the competitor's activity geographical scope is very important in 5 analysed areas of activity. The preference for the partner's technological position is relevant in four areas and the preference for the partner's market position in three areas. Partner's size is essential in two areas. The obtained results give rise to the positive assessment and verification of hypothesis H_1.

The construction of classification trees included all 9 areas of cooperation (Appendix), for which the prediction accuracy was determined as the relation of accurately qualified companies to the number of all companies cooperating in a given area (Table 2). All trees indicated over 50% classification accuracy and the best results were achieved in the classification trees built for the areas like human resources, finance and marketing. The results obtained in the course research were recorded in the form of fuzzy (*if-then)* rules (Table 3 - Appendix). These rules are useful to determine the profile of a coopetitor, whose cooperation in particular areas is labelled with significant benefit, poor benefit, zero effect or loss. The accuracy rate is determined for all the rules calculated as the quotient of the number of companies of a given class observed in the final node and the number of all companies in the final node.

The analyses indicate that a great benefit from cooperation in the R&D area is indicated by the companies which cooperate with partners of a comparable size, a stronger technological and market positions and the ones operating on the international scale. The benefit decreases when the selection refers to a larger but domestic competitor. Furthermore, coopetition will show a loss when the company decides to cooperate with a smaller competitor with a weaker market position and operating in the same country.

In the case of input supply as an area of cooperation, the company will derive a substantial benefit if it becomes affiliated with a competitor of a comparable size, operating on the international or domestic scale and representing a comparable or higher technological level. However, such a company should avoid cooperation with smaller competitors with a weaker or stronger technological position, a weaker market position and domestic scope (the coopetition results in a zero effect at its best).

Companies deciding to pursue competitive cooperation in the area of production/services should look for coopetitors with a stronger or comparable technological position and diversified geographical scope of activity (significant benefit from coopetition), while the cooperation with partners with a weaker technological position will not bring any benefit.

Competitive cooperation in the area of sales/distribution will generate a great benefit if companies select coopetitors which do have a higher than comparable market position and their geographical scope is confined to the domestic level. The competitors with a strong market and technological position should be avoided. However, co-

operation with competitors with a strong market position in the area of marketing will bring a significant benefit. In this area, it is dangerous to join competitors with only a domestic scope representing at the most a comparable technological position and a weaker market position.

Logistic competitive cooperation requires the selection of a smaller or comparable partner with a comparable technological position and a stronger market position operating on the domestic market. A significant benefit may be expected then. On the other hand, when the selection of logistic cooperation results in larger or comparable companies with a stronger technological position and a weaker market position operating on the local or national market, a coopetitive fiasco may be expected.

Cooperation in the area of finance may generate considerable profits if companies choose a smaller or comparable coopetitor with comparable technological and market positions and operating on the domestic market. It is unfavourable to cooperate with a larger or comparable competitor with a weaker market position. Such relations may become disadvantageous.

As in the case of R&D, competitive cooperation in the field of IT requires a coopetitor of a comparable technological positon and a stronger or comparable market position operating at least on the national market. Considerable benefit is to be expected from these relations. On the other hand, partners with a stronger or comparable technological position and a weaker market position operating on the local or national market may contribute to losses.

Companies which decide to pursue competitive cooperation in the area of human resources should choose organisations with at least comparable technological and market positions. The competitor's geographical scope plays a less significant role; thus any scope is acceptable. The relations likely to bring no benefit arise from the selection of partners with a weaker technological position.

The analyses prove that benefits derived from coopetitive relations depend on an appropriate selection of coopetitors. The values of competitors' attributes in certain areas of cooperation may stimulate the generation of benefits, but at the same time they may become inhibitors in others. This means that the selection of the area of competitive cooperation should result in a coopetitor of an appropriate profile of attributes, specific to this area.

The research also indicates that it is possible to search for common values of attributes of competitors to make the cooperative relations beneficial for companies in several areas. For example, it is worth cooperating with comparable competitors in the following areas: R&D, input supply, logistics, IT and finance. Companies should look for competitors with a stronger technological position in the area of R&D, HR, IT, production/services and input supply. However, a strong technological position poses a threat to the cooperation in the area of finance and sales/distribution. A coopetitor's stronger market position helps to create relations benefit in the case of cooperation in the area of R&D, logistics and IT. At the same time, a partner's strong market position may serve as a constraint in the area of sales/distribution, and cooperation with an international competitor may be advantageous for generated benefits in the case of coopetition in the areas of R&D, IT, input supply and marketing. It is not profitable in the case of logistics and finance.

The research results explicitly prove the necessity for the differentiation of coopetitor's profile attributes (through the differentiation of their value) depending on the area of cooperation so that the relations between the parties could bring a significant benefit. This gives rise to a positive verification of hypothesis H_2.

6 Conclusions

Undoubtedly, coopetition belongs to the most complex types of inter-organisational relations. This arises not only from the simultaneous occurrence of seemingly contradictory streams of relations, i.e. competition and cooperation, but also the requirements of attributes of particular parties. The research demonstrates that not all candidates for coopetition are appropriate, and the significance and value of these candidates' attributes depend on the area of cooperation.

The results of the research, besides having a cognitive character, have a substantial practical dimension. Companies may, on a preliminary basis, select competitors with whom the cooperation is more likely to generate a significant benefit from coopetition with regard to the four analysed attributes. At the same time, it is possible to make use of similar values of coopetitors' attributes, including several activities in the chain value. Such an approach reduces the search costs for coopetition candidates as well as the costs associated with coopetitive relations management. This means that the number of frogs to kiss may be *ex ante* limited.

However, the research presented also has its limitations. The sample surveyed is confined to high-tech companies operating in Poland. Additionally, the analyses refer only to four attributes. It therefore seems justified to extend the research in the geographical and sectoral dimensions as well as to extend the list of attributes to be considered when selecting coopetitors.

Acknowledgements

This paper was financially supported by the Ministry of Science and Higher Education in Poland [research grant no. NN 115 006040].

References

Akdoğan, A.A, Doğan, N.Ö., & Cingöz, A. (2015). Coopetition as a Business Strategy: Determining the Effective Partner Selection Criteria Using Fuzzy AHP. *International Review of Management and Business Research*, 4(1), 137-151.

Aldrich, H., & Auster, E.R. (1986). Even dwarfs started small: Liabilities of age and size and their strategic implications. *Research in Organizational Behavior*, 8, 165-198.

Alvarez, S.A. & Barney, J.B. (2001). How entrepreneurial firms can benefit from alliances with large partners. *Academy of Management Executive*, 15(1), 139-148, http://dx.doi.org/10.5465/AME.2001.4251563

Axelrod, R. (1984). *The Evolution of Co-operation*, New York: Basic Books Inc..

Bengtsson, M. & Kock, S. (2000). Coopetition in Business Networks: to Cooperate and Compete Simultaneously. *Industrial Marketing Management,* 29(5), 411-426, http://dx.doi.org/10.1016/S0019-8501(99)00067-X

Bouncken, R.B., & Kraus, S. (2013). Innovation in knowledge-intensive industries: The double-edged sword of coopetition. *Journal of Business Research*, 66, 2060-2070, http://dx.doi.org/10.1016/j.jbusres.2013.02.032

Brandenburger, A.M. & Nalebuff, B.J. (1995). The Right Game: Use Game Theory to Shape Strategy. *Harvard Business Review*, July-August, 57-71.

Brandenburger, A.M. & Nalebuff, B.J. (1996). Co-opetition. 1. A Revolutionary Mindset that Combines Competition and Cooperation. 2. The Game Theory Strategy That's Changing the Game of Business. New York: Doubleday.

Breiman L., Friedman J., Stone C.J., & Olshen R.A. (1993). *Classification and regression trees*. New York: Chapman and Hall/CR.

Brito, C., & Costa de Silva, S. (2009). When trust becomes the fourth „C" of cooperation. *The Marketing Review*, 9(4), 289-299, http://dx.doi.org/10.1362/146934709X479881

Brown, L.S., & Eisenhardt, K.M. (1997). The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations. *Administrative Science Quarterly*, 42(1), 1-34, http://dx.doi.org/10.2307/2393807

Chen, M.J., Su, K.H., & Tsai, W. (2007). Competitive tension: The awareness-motivation-capability perspective, *Academy of Management Journal*, 50(1), 101-118, http://dx.doi.org/10.5465/AMJ.2007.24162081

Chetty, S.K. & Wilson, H.I.M. (2003). Collaborating with Competitors to Acquire Resources. *International Business Review,* 12, 61-81, http://dx.doi.org/10.1016/S0969-5931(02)00088-4

Chin, K.-S., Chan, B.L., & Lam, P.-K. (2008). Identifying and prioritizing critical success factors for coopetition strategy. *Industrial Management & Data Systems*, 108(4), 437-454, http://dx.doi.org/10.1108/02635570810868326

Clarke-Hill, C., Li, H. & Davis, B. (2003). The Paradox of Co-operation and Competition in Strategic Alliances: Towards a Multi-Paradigm Approach. *Management Research News,* 26(1), 1-20, http://dx.doi.org/10.1108/01409170310783376

Colley, A., Roberts, N. & Chipps, A. (1985). Sex-role identity, personality and participation in team and individual sports by males and females. *International Journal of Sports Psychology*, 16, 103-112.

Cullen, J.B., Jonhson, J.L., & Sakano, T. (1995). Japanese and local partner commitment to IJVs: psychological consequences of outcome and investment in IJV relationship. *Journal of International Business Studies,* 26(1), 91-115, http://dx.doi.org/10.1057/palgrave.jibs.8490167

Cygler, J. (2010). Co-opetition in Network Relations between Businesses. *Organization and Management*, 1 (139), 59-71.

Cygler, J. (2015). Structural pathology in inter-organizational networks and the decision-making autonomy of its members. In: Sroka, W. and Hittmár, Š. (Eds.) *Management of network organizations. Theoretical problems and dilemmas in practice*. Heidelberg-New York: Springer Publishing, 181-195, http://dx.doi.org/10.1007/978-3-319-17347-4_13

Dagnino, G.B. (2009). Coopetition strategy. A new kind of interfirm dynamics for value creation. [in:] G.B. Dagnino and Rocco E., *Coopetition Strategy. Theory, experiments and cases. London*: Roulledge Studies in Global Competition.

Das, T.K. & Teng, B.-S. (2000). A Resource-Based Theory of Strategic Alliances. *Journal of Management*, 26(1), 31-61, http://dx.doi.org/10.1177

/014920630002600105

Doz, Y., & Hamel, G. (1998). *Alliance Advantage. The Art of Creating Value through Partnering*, Boston: Harvard Business School Press.

Edmonson, A.C. & McManus, S.E (2007). Methodological fit in management field research. *Academy of Management Review*, 32(4), 1155-1179, http://dx.doi.org/10.5465/AMR.2007.26586086

Esposito F., Malerba D., & Semeraro G. A. (1997). Comparative analysis of methods for pruning decision trees. *Machine Learning,* 19(5), 476–491, http://dx.doi.org/10.1109/34.589207

Geradin, D. & McCahery, J.A. (2005). *Regulatory Co-opetition: Transcending the Regulatory Competition Debate,* TILEC Discussion Paper, Tilburg University.

Geraudel, M. & Salvetat, D. (2014). What are the antecedents of coopetition? *European Business Review*, 26(1), 23-42, http://dx.doi.org/10.1108/EBR-09-2012-0051

Geringer, J.M. (1991). Strategic determinants of partner selection criteria in international joint ventures. *Journal of International Business Studies*, 22(1), 41-62, http://dx.doi.org/10.1057/palgrave.jibs.8490291

Glaister, K.W., & Buckley, P.J (1997). Task-related and Partner-related Selection Criteria in UK International Joint Ventures. *British Journal of Management*, 8, 199-222, http://dx.doi.org/10.1111/1467-8551.00061

Gnyawali, D. R., & Madhavan, R. (2001). Cooperative Networks and Competitive Dynamics: a Structural Embeddedness Respective. *Academy of Management Review*, 26(3), 431-445, http://dx.doi.org/10.5465/AMR.2001.4845820

Gnyawali, D. He, J. & Madhavan, R. (2006). Impact of Co-Opetition on Firm Competitive Behavior: An Empirical Examination. *Journal of Management*, 32(4), 179-197, http://dx.doi.org/10.1177/0149206305284550

Gnyawali, D.R. & Park, B.-J.R. (2009). Coopetition in technological innovation in small and medium-sized enterprises a multilevel conceptual model. *Journal of Small Business Management*, 47(3), 308-330, http://dx.doi.org/10.1111/j.1540-627X.2009.00273.x

Grimm J. & Grimm W. (1812). *Kinder- und Hausmärchen,* Göttingen**.**

Grisham, T. (2006). Metaphor, poetry, storytelling and cross-cultural leadership. *Management Decision,* 44(4), 486 – 503, http://dx.doi.org/10.1108/00251740610663027

Gulati, R. (1999). Network location and learning: The influence of network resources and firm capabilities on alliance formation. *Strategic Management Journal*, 20, 397-420. http://dx.doi.org/10.1002/(SICI)1097-0266(199905

Harris, S. & Dibben, M. (1999). Trust and Co-operation in Business Relationship Development: Exploring the influence of National Values. *Journal of Marketing Management*, 15, 463-483, http://dx.doi.org/10.1362/026725799785045851

Heimeriks, K.H. & Duysters, G. (2007). Alliance Capability as a Mediator Between Experience and Alliance Performance: An Empirical Investigation into the Alliance Capability Development Process. *Journal of Management Studies,* 44(1), 25-49, http://dx.doi.org/10.1111/j.1467-6486.2006.00639.x

Hennart, J.F. (1988). A transaction cost theory of equity joint ventures. *Strategic Management Journal*, 9, 361-374, http://dx.doi.org/10.1002/smj.4250090406

Hill, C.W.L. (1990). Cooperation, Opportunism, and Invisible Hand: Implications for Transaction Cost Theory. *Academy of Management Review,* 15(3), 500-513, http://dx.doi.org/10.5465/AMR.1990.4309111

Hitt, M.A., Dacin, T.M., Levitas, E., Arregle, J., & Borza, A. (2000). Partner selection in emerging and developed market contexts: resource-based and organizational learning perspectives, *Academy of Management Journal*, 43(3), 449-467, http://dx.doi.org/10.2307/1556404

Kotsiantis S.B. (2007). Supervised machine learning: a review of classification techniques. *Informatica*, 31(3), 249–268.

Lado, A.A., Boyd, N.G. & Hanlon, S.C., (1997). Competition, Cooperation, And the Search for Economic Rents: A Syncretic Model. *Academy of Management Review*, 22(1), 110-141, http://dx.doi.org/10.5465/AMR.1997.9707180261

Lane, C. & Backhmann R. (eds.) (1998). *Trust Within and Between Organizations*. Oxford: Oxford University Press.

Lechner, Ch., Dowling, M. & Welpe, I. (2006). Firm Networks and Firm Development: The Role of The Relational Mix. *Journal of Business Venturing,* 21, 514-540, http://dx.doi.org/10.1016/j.jbusvent.2005.02.004

Levin, M. A. & McDonald, R. E. (2006). R-A Theory as a post-Chicago Argument for Legal Coopetition. *The Marketing Management Journal*, 16(2), 1-12.

Lewis R.J. (2000). *An Introduction to Classification and Regression Tree (CART) Analysis*. Harbor-UCLA Medical Center in San Francisco, California (working paper)

Loh W.Y, & Shih Y.S. (1997). Split selection methods for classification trees. *Statistica Sinica*, 7, 815-840.

Lu, L. & Argyle, M. (1991). Happiness and Cooperation. *Personality and Individual Differences,* 12, 1019-1030, http://dx.doi.org/10.1016/0191-8869(91)90032-7

Luo, X, Slotegraaf, R. & Pan, X. (2006). Cross-functional „coopetition": The simultaneous role of cooperation and competitio9n within firms. *Journal of Marketing*, 70, 67-80, http://dx.doi.org/10.1509/jmkg.70.2.67

Luo, Y. (1997). Partner selection and venturing success: The Case of Joint Ventures with Firms in the People's Republic of China**.** *Organization Science*, 8(6), 648-

662, http://dx.doi.org/10.1287/orsc.8.6.648

Luo, Y. (1998). Joint venture Success in China: How should we select a good partner? *Journal of World Business*, 33(2), 145-166, http://dx.doi.org/10.1016/S1090-9516(98)90003-7

Luo, Y. (2004). *Coopetition in International Business*, Copenhagen: Copenhagen Business School Press.

Luo, Y. (2005). Toward Coopetition within a Multinational Enterprise: a Perspective from Foreign Subsidiaries. *Journal of World Business,* 40, 71-90, http://dx.doi.org/10.1016/j.jwb.2004.10.006

Luo, Y. (2007). A coopetition perspective of global competition. *Journal of World Business*, 42, 129-144, http://dx.doi.org/10.1016/j.jwb.2006.08.007

Madhola, A. (2000). Transaction (in)efficiency, value (in) efficiency and inter-firm collaboration, [in:] D. Faulkner& de Rond, M. (eds.), *Cooperative Strategy: Economic , Business, and Organizational Issues*, Oxford: Oxford University Press.

Matthews, W. H. (1991). Kissing technological frogs: Managing technology as a strategic resource, *European Management Journal*, 9(2), 145–148, http://dx.doi.org/10.1016/0263-2373(91)90074-Z

Mayberry, J.P., Harsanyi, J.C., Scarf, M.E. & Selten, R. (1992). *Game - Theoretic Models of Co-operation and Conflict*, San Francisco: Westview Press.

OECD 2003. OECD Science, technology and industry scoreboard 2003, OECD Publishing. [Online]. Retrieved 2013, December 30 from http://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-industry-scoreboard-2003_sti_scoreboard-2003-en

Ohmae, K. (1989), The global logic of strategic alliances. *Harvard Business Review*, 67(2), 143-154.

Park, S. & Russo, M.V. (1996). When competition eclipses cooperation: an event history analysis of joint venture failure. *Management Science*, 42(6), 875-890, http://dx.doi.org/10.1287/mnsc.42.6.875

Parkhe, A. (1993). Strategic Alliances Structuring: A Game Theoretic and Transaction Cost Examination of Inerfirm Co-operation. *Academy of Management Journal*, 36(4), 794-829, http://dx.doi.org/10.2307/256759

Peng, T.-J. & Bourne, M. (2009). The coexistence of competition and cooperation between networks: implications from two Taiwanese healthcare networks. *British Journal of Management*, 20(3), 377-400, http://dx.doi.org/10.1111/j.1467-8551.2008.00565.x

Piccarreta R. (2008), Classification trees for oridinal variables, *Computational Statistics*, 23, 407-427, http://dx.doi.org/10.1007/s00180-007-0077-5

Podgorelec V., Kokol P., Stiglic B., & Rozman I. (2006). Decision trees: an overview and their use in medicine. *Journal of Medical Systems*, 26(5), 445–463, http://dx.doi.org/10.1023/A:1016409317640

Quinlan J.R.(1993). *C4.5: Programs for machine learning.* London: Morgan Kauffman.

Quintana-García C., & Benavides-Velasco C.A., (2004). Cooperation, Competition, and Innovative Capability: a Panel Data of European Dedicated Biotechnology Firms. *Technovation*, 24, 927-938, http://dx.doi.org/10.1016/S0166-4972(03)00060-9

Ritala, P., Golman, A., & Wegmann, A. (2014). Coopetition-based business models: The case of Amazon.com. *Industrial Marketing Management*. 43(2), 236-249, http://dx.doi.org/10.1016/j.indmarman.2013.11.005

Ritala, P., & Hurmelinna-Laukkanen, P. (2009). What's in it for me? Creating and appropriating value in innovation-related coopetition. *Technovation*, 29, 819-829, http://dx.doi.org/10.1016/j.technovation.2009.07.002

Rodan, S. (2002). Innovation and heterogeneous knowledge in managerial contact networks. *Journal of Knowledge Management*, 6(2), 152 – 163, http://dx.doi.org/10.1108/13673270210424675

Rokach L., & Maimon O. (2008). *Data mining with decision trees.* Singapore: World Scientific Publishing Co. Pte. Ltd.

Ross, S.R., Rausch, M.K. & Canada, K.E. (2003). Competition and Cooperation in the five-factor model: individual differences in achievement orientation. *The Journal of Psychology*, 137(4), 131-139, http://dx.doi.org/10.1080/00223980309600617

Shah, R.H., & Swaminathan, V. (2008). Factors influencing partner selection in strategic alliances: The moderating role of alliance context. *Strategic Management Journal*, 29(5), 471-494, http://dx.doi.org/10.1002/smj.656

Selten, R. (1998). Features of Experimentally Observed Bounded Rationality. *European Economic Review*, 42, 413-436, http://dx.doi.org/10.1016/S0014-2921(97)00148-7

Simmons, C.H., Simrel King, C., Settle Tucker, S., & Wehner, E.A. (2001). Success strategies: winning through cooperation or competition. *The Journal of Social Psychology*, 126(4), 437-444, http://dx.doi.org/10.1080/00224545.1986.9713610

Soppe, B., Lechner, Ch., & Dowling, M. (2014). Vertical coopetition in entrepreneurial firms: theory and practice, *Journal of Small Business and Enterprise Development*, 21(4), 548-564, http://dx.do.org/10.1108/JSBED-03-2014-0052

Stern, I. (2005). *The Joint Venture Paradox: Patern-firm Characteristics, Social Cues, and Joint Venture Performance*, University of Texas at Austin, (Ph.D. dissertation)

Tsai, W. (2002). Social Structure of "Coopetition" Within a Multiunit Organization: Coordination, Competition, and Intraorganizational Knowledge Sharing. *Organization Science* 13(2), 179-190, http://dx.doi.org/10.1287/orsc.13.2.179.536

Williamson, O.E. (1987). *The Economic Institutions of Capitalism*. New York: The Free Press.

Joanna Cygler: M.A (Economics), Ph.D. (Management) and Habilitation (Strategic Management) from the Warsaw School of Economics (SGH). Associate Professor (Institute of Management, Faculty of Management and Finance) - SGH. Her research interests are related to international business cooperation. Authoress of numerous scientific publications on strategic alliances, business coopetition and network relations published in various countries. She worked for the Chancellery of the President of Poland (special advisor) and other central administrative institutions in Poland (Ministry of Economy, Ministry of Foreign Affairs). Prof. Cygler coordinated many research projects financed by Polish, European and American (Fulbright research scholarship, University of Minnesota) scientific organizations.

Katarzyna Dębkowska: M.A (Mathematics), Ph.D. (Economics), a faculty member of the Economic Informatics and Logistics Department (Faculty of Management) at the Technical University of Bialystok. Specializes in using quantitative research methods in business practice. Her research activities are focused mainly on the business models concept. Authoress of the analyzes in the following economic sectors: food, tourism, transport, e-commerce and e-services. Another area of both academic and practical interests deals with the use of foresight research. She is a member of the Polish Society for Production Management, IEEE and the statistic editor of a scientific journal "Economics and Management".

Determinante učinkovitosti tekmovanja in sodelovanja: velikost konkurenta, geografsko področje, tržni in tehnološki položaj

Ozadje in cilj: Članek predstavi empirično analizo o vrednosti in pomenu značilnosti partnerjev, katerih medsebojni odnos je kombinacija sodelovanja in konkurence (ang. coopetitors). Osredotočen je na značilnosti, ki ustvarjajo znaten skupni korporativni dobiček. Pri analizi smo upoštevali štiri glavne atribute konkurentov: velikost, geografsko področje, tržni in tehnološki položaj. Raziskava vključuje tudi Porter-jevo vrednostno verigo.
Metodologija in pristop: Raziskava je bila opravljena na vzorcu 235 visokotehnoloških podjetij, ki delujejo na Poljskem in so vključena v tekmovanje in sodelovanje. Vzorec je reprezentativen. Podatki so bili zbrani na intervjujih z vodilnimi managerji ali lastniki. Raziskava uporablja metodo klasifikacijskih dreves; ta metoda uporablja diagrame tako, da zaporedoma deli proučevani podatkovni prostor v razrede (prostore) s podobnimi lastnostmi. Učinek tekmovanja in sodelovanja, vključno z njegovimi različicami, kot so ga ocenila podjetja sodelujoča v raziskavi, je služil kot kvalitativna neodvisna spremenljivka. Štirje atributi podjetij v tekmovanju in sodelovanju in njihove variante so bili uporabljene kot pojasnjevalne spremenljivke (prediktorji), ki vplivajo na oceno sodelovanja.
Rezultati: Rezultati raziskave so pokazali potrebo po izboru natančnega profila partnerja pri tekmovanju in sodelovwanju. Pomen vsakega od štirih atributov je lahko različen, odvisno področja sodelovanja s partnerjem. Vrednost vseh atributov konkurentov je tudi lahko različna, glede na področje sodelovanja. Profil izbranega partnerja za tekmovanje in sodelovanje glede na štiri analizirane lastnosti lahko postane spodbuda za ustvarjanje prednosti in koristi na enem področju, medtem ko je v drugem prostoru lahko postane ovira.
Zaključek: Izbira partnerja za tekmovanje in sodelovanje je bila do sedaj obravnavana splošno, ne da bi natančno proučili specifične potrebe in področje sodelovanja med partnerjema. Izbira ustreznega profila partnerja za tekmovanje in sodelovanje omogoča zmanjšati stroške pri iskanju ustreznega kandidata za tekmovanje in sodelovanje in management odnosov.

Ključne besede: *tekmovanje in sodelovanje, učinek, atribut, klasifikacijska drevesa*

APPENDIX

Table 3: The rules of the enterprises' classification in nine areas of competitive cooperation

Area	Node	If				Then	AR (%)	Area	Node	If				Then	AR (%)	Area	Node	If				Then	AR (%)
		Size	TP	MP	GS	Effect				Size	TP	MP	GS	Effects				Size	TP	MP	GS	Effects	
R&D	8	C	ST	C or ST		Signif. benefit	77.8	Marketing	14	C		ST	L or D		60	Computer information systems	15	C	C	ST or C	D or I	Signif. benefit	56.3
	15			ST	I		42.9		6			St or W	I		75		9	S or B	C	ST or C			100
	9	C	C or ST	C or ST			53.8		4			C	I		75		10	B or C	ST or W	ST or C			54.2
	14	B or S		C or ST	D	Poor benefit	54.5		17	S	ST or C	C	L or D		100		16		W	W	L	Poor benefit	54.5
	11	B or S		C or ST			87.5		16	C	ST or C	C	L or D	Poor benefit	59.1		14	C	C	ST or C	L		75
	7		C or ST	W			50		8	B		C	L or D		100		7			W	I		100
	16	B or C	W	W	D	Zero effect	60		13	S or C	W	C	L or D		100		12		ST or C	W	L or D	Zero effect	66.7
	13		W	W	L or I		100		15	S or B		ST	L or D	Zero effect	47,1		11	S	ST or W	ST or C			60
	17	S	W	W	L	loss	60		11			W	L or D		62,5		17		W	W	L		100
Input supply	9	C			I or D	Signif. benefit	55	Logistics	8		C	ST or C	D	Signif. benefit	64.7	Human Relations	11		ST or C	ST or C	I or L.	Signif. benefit	63.6
	6	S	C				100		5			ST or C	L or I		63.2		13	B or S	ST or C	ST or C	D		60
	5	C or B			L	Poor benefit	60		11	C or B	C or W	W		Poor benefit	61.5		7		W		D or L	Poor benefit	75
	8	B			I or D		47.8		6	S		W			50		8	C	ST or C		D		50
	11	S	ST or W		L or I		42.9		12		ST	ST or C	D		50		10		ST or C	W	I or L		66.7
	13	C or B			L	Zero effect	57.1		10	C or B	ST	W		Zero effect	66.7		12	B or S	ST or C	W	I	Zero effect	75
	17	S	ST or W	W	I	loss	33.3		13		W	ST or C	D		100		6			W	D		100
Sales/ Distribution	11		C or W	C or W	D or L	Signif. benefit	53.7	Production/Services	4		ST or C		D	Signif. benefit	61.8	Finance	18	C	C	C	N	Signif. benefit	44.4
	16	C or B	ST	C or W	N		47.6		6		ST or C		I		45		17	S	C	C			66.7
	13		ST	ST or C	D or L		80		8	B	ST or C		L		73.3		12		ST or W	ST or W	D or I		52.2
	9		C or W	ST	D or L	Poor benefit	56.3		10	C or S	ST or C	W	L	Poor benefit	50		6		ST or W	C		Poor benefit	77.8
	6			C or W	I		85.7		11	C or S	ST or C	ST or C	L		70.6		15	C	C	C or W	I or L		75
	17	C or B	ST	W	L		60		2		W			Zero effect	36.8		13		ST or W	ST or W	L	Zero effect	60
	4		ST	ST			66.7										16	B	C	C			66.7
	8		C or W	ST	I	Zero effect	100										11	B or S	C	ST or W			100
																	9		C	ST			100
																	19	C	C	W	L	loss	100

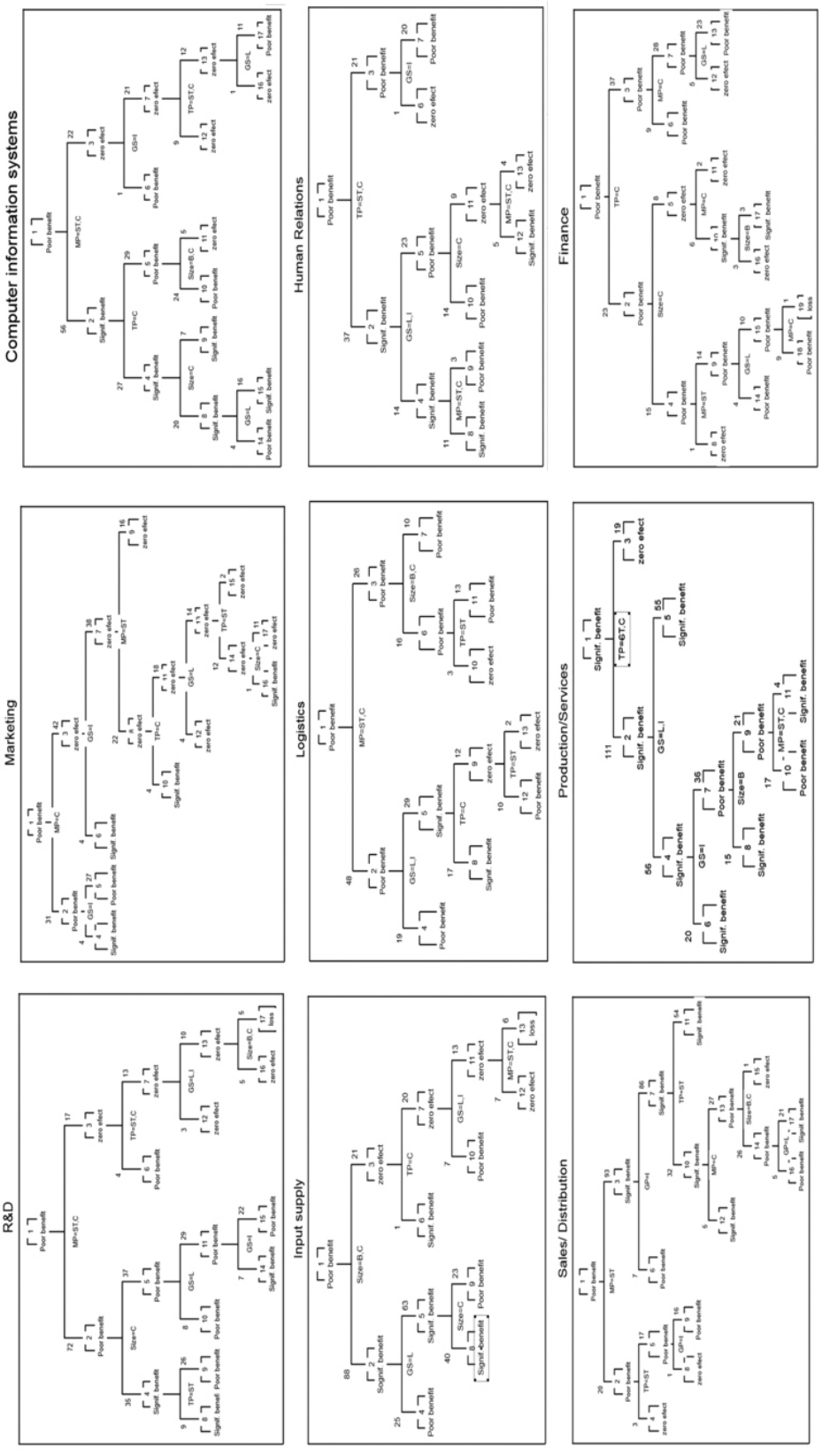


Figure 1: The rules of the enterprises' classification in nine areas of competitive cooperation

DOI: 10.1515/orga-2015-0020

Impact of Population Ageing on Unemployment and Entrepreneurial Activity: the Case of Slovenia

Marjetka Troha Akanni[1], Žiga Čepar[2]

[1]Lekšan d.o.o. Bloška Polica 8, SI-1384 Grahovo, Slovenia
marjetka.troha@gmail.com

[2]University of Primorska, Faculty of Management, Cankarjeva 5, SI-6000 Koper, Slovenia
ziga.cepar@fm-kp.si

Purpose: The purpose of the research is to investigate impact of population ageing on unemployment and entrepreneurial activity in Slovenia since it is one of the topical issues in an ageing Europe and has many implications for economic and non-economic welfare.
Design and Methodology: First, we introduce the phenomenon of population ageing and provide some literature review on population ageing impact on unemployment and entrepreneurial activity. Second, we employ multiple regression analysis on cross-section data for Slovenian municipalities. We use secondary data collected from databases of Statistical Office of Republic of Slovenia and Employment Service of Slovenia on demographic and economic variables by 210 municipalities for the year 2009.
Results: The regression analysis results confirm our first hypothesis: municipalities with higher ageing index and higher average age also have higher registered unemployment rate. If ageing index (average age) is higher by 1 %, the registered unemployment rate is higher on average by 0.532 % to 0.670 % (by 2.431 % to 3.379 %), ceteris paribus. Our regression analysis also confirms our second hypothesis: municipalities with higher average age also have lower number of enterprises per 100 population. If average age is higher by 1% (by 1 year), the number of enterprises per 100 population is lower on average by 1.7 % (by 0.182 enterprises), ceteris paribus.
Conclusion: We may conclude that population ageing without properly addressing it, consequently leads into lower economic welfare. That additionally highlights the importance of a proper demographic and social policy when governing labour market policy.

Keywords: *unemployment; entrepreneurship; population ageing; labour market; Slovenian municipalities*

1 Introduction

The fundamental motivation for our research is the significant and mostly unfavourable process of population ageing in Slovenia, across Europe and also in many other countries because of the various economic consequences that arise from those demographic changes. Moreover, the evident population ageing has not only economic consequences, but also social, psychological, cultural, institutional and political consequences (Malačič, 2008, 795) and therefore requires changes and adjustments in many different fields of some country's system.

We found investigation of population ageing consequences especially important since population ageing affects living standard of some country, the quality of life or welfare, which however are quite a complex concepts (Mandič and Filipovič-Hrast, 2011, 16-17; Dubska, 2010, 5; Osberg and Sharpe, 2011, 1-5; Watson et al., 2010, 1-3).

Received: September 1, 2015; revised: September 27, 2015; accepted: October 26, 2015

To briefly illustrate the extent of population ageing in Slovenia, we can have a look at the average age of Slovenian population which rose from 35.9 years in the year 1991 to 42.4 years in the year 2014 and ageing index from 53.6 to 120.5 in the same time period. Similarly, the share of old people (people who are 65 years old or more) in total Slovenian population increased from 12.6% to 17.7% from the year 1991 to 2014 (SORS, 2015). The long run projections forecasts natural increase in Slovenian population to be -0.9 in the year 2050 (U.S. Census Bureau, 2011), which will further increase the share of old and decrease the share of young people in Slovenian population. According to UN projections, in the year 2050, the share of old people in total Slovenian population will reach 33.1%, while median age will rise up to 52.2 years (United Nations, 2006).

In Slovenia as well as in most of the other European countries, unemployment had been declining until 2008, when it reached its minimum just before the outbreak of the economic crisis. In Slovenia the unemployment rate was 4.4% and in European Union (28 countries) it was 7.0%. It kept increasing until 2013, when it reached its maximum at 10.1% in Slovenia and 10.9% in European Union (28 countries). In 2013, unemployment rate was the highest in Greece (27.5%), Spain (26.1%), Croatia (17.3%), Portugal (16.4%) and Cyprus (15.9%) and the lowest in Luxembourg (5.9%), Austria (5.4%), Iceland (5.4%), Germany (5.2%) and Norway (3.5%) (Eurostat, 2015). According to Kurek and Rachwał (2011) employment rates in the population aged 50-64 in 2007 were highest in the Scandinavian states (Sweden, Finland) as well as in the United Kingdom and Norway (over 75%).

Relatively high levels of employment rates were also recorded in Portugal and Denmark, with a decrease in employment in recent years. The lowest rates of employment were observed in Poland, Hungary, Italy, Belgium, Luxembourg and Slovenia (less than 53%). On another hand in 2007 the number of small and medium enterprises per 1,000 inhabitants was 42.1 for the European Union (27 countries) and reached its highest values (over 60) in the countries of south Europe (Portugal, Spain, Italy, Greece) as well as in Sweden and the Czech Republic, while the value for Slovenia was around 45 (Kurek and Rachwał, 2011).

There are quite some studies on impact of population ageing on labour market, and also specifically on unemployment and entrepreneurship – in some cases proving a negative and in the other cases a positive impact of population ageing on unemployment and/or on entrepreneurship. We present some of those studies in the next section. Of course a variety of factors, including those related to the global economic slowdown, may affect the unemployment rate and entrepreneurial activity, so population ageing is definitely not the primary or the only factor. Some of these other factors are briefly discussed in the next section. However our focus in this study is particularly on population ageing.

The main motivation and reason for our own research in this field is therefore to provide new empirical evidence which would support the first or the second group of researchers and to provide some original specific findings about the relationship between population ageing and unemployment as well as population ageing and entrepreneurship based on cross section data in the case of Slovenian municipalities, which has not been done yet in any other study. The results of our research and answers to our research questions contribute to the existing body of research about impact of population ageing on labour market; yet again it is worth exploring that subject since population ageing implications directly and indirectly impact the quality and standard of our lives.

We would like to answer two research questions. First: what can be found out about the impact of population ageing on unemployment in case of Slovenia? And second: what can be found out about the impact of population ageing on entrepreneurial activity in case of Slovenia? Unemployment and entrepreneurial activity are important labour market aspects, are highly interrelated and this is also why we wanted to analyse them together in one study. Higher level of entrepreneurial activity also means higher number of enterprises, higher number of new workplaces which finally impact unemployment and the demand and supply side of the labour market. Entrepreneurship is a very complex concept with many different aspect and dimensions (Wach, 2015), however in this study, entrepreneurial activity is interpreted in a narrow sense and is proxied with the relative number of enterprises.

In the next section we review some previous research about effects of population ageing on unemployment and entrepreneurial activity which is also the focus of our own investigation.

2 Theory and Literature Review on Impact of Population Ageing on Unemployment and Entrepreneurship

In order to provide some theoretical discussion and background on which we build our hypotheses we here first review some basic unemployment theories and later on findings of the studies on impact of population ageing on unemployment and entrepreneurship.

2.1 Unemployment Theories

Unemployment occurs when people are without work and are actively seeking work. It is measured by the unemployment rate, which is calculated as a percentage by dividing the number of unemployed individuals by all individuals currently in the labour force (employed and unemployed).

Theories of unemployment explain causes, consequences and offer solutions for unemployment. *Classical* economics, *New classical* economics, and the *Austrian School* of economics argue that market mechanisms are reliable means of resolving unemployment – no government intervention is needed. *Keynesian* economics emphasizes the cyclical nature of unemployment and recommends government interventions in the economy that is supposed to reduce unemployment during recessions (Layard et al. 2005).

According to the different reasons why unemployment occurs, labour market theory most commonly lists structural, frictional, cyclical and classical unemployment. *Classical* or real-wage unemployment occurs when real wages for a job are set above the equilibrium level, causing the quantity of labour supplied to exceed the quantity of labour demanded.

Cyclical or Keynesian unemployment occurs when there is not enough aggregate demand in the economy to provide jobs for everyone who wants to work. Due to the decrease in aggregate demand, less production and consequently fewer workers are needed. Because wages are sticky and do not fall to meet the equilibrium level *cyclical* unemployment occurs. *Structural* unemployment focuses on structural problems in the economy and inefficiencies such as a mismatch between the supply and demand of workers with necessary skill sets. *Frictional* unemployment depends on the time period between jobs when a worker is searching for or transitioning from one job to another. It focuses on voluntary decisions to work based on each individual's valuation of their own work and how that compares to current wage rates plus the time and effort required finding a job. Voluntary unemployment - most of the frictional unemployment - is attributed to the individual's decisions, whereas involuntary unemployment - most of the cyclical, structural and classical unemployment - exists because of the socio-economic environment (Layard et al. 2005). Population ageing can trigger some changes in causes for unemployment which is further discussed in the next section.

2.2 Impact of Population Ageing on Unemployment

Literature review reveals that there is no general consensus on whether population ageing increases or decreases general rate of unemployment. There are many channels through which population ageing impacts unemployment rates of young and old and consequently the general rate of unemployment which is a result of changes in some population's age structure on one hand and changes of age specific unemployment rates on the other hand.

There are several channels through which population ageing might *decrease* population general rate of unemployment. Bratić and Vukšić (2014) in their study on Croatian population found out that compared to older workers younger workers predominantly have fixed-term employment contracts, what means that they can be much more easily fired than older workers. If older workers have more permanent contracts compared to younger workers who predominantly get a fixed term contract at least for the first job, consequently older people are less likely to lose a job and to become unemployed, while most of young people even need to find their first job. As a result there is higher unemployment among young compared to old people and thus older society with higher share of old and lower share of young people will exhibit lower general rate of unemployment (Eichhorst, 2013). Additionally, younger people have higher unemployment rates due to higher job separation rates (Gervais et al., 2014).

Studies conducted by Bell (2011), Cahuc et al. (2013) and Dunsch et al. (2015) show that fluctuations in economic activity and recessions affect unemployment of young more than unemployment of old. This again means that older societies with higher share of old workers are less vulnerable to economic shocks and keep higher employment rates compared to younger societies.

Population ageing brings not only huge economic, but also social and political changes (Stanovnik and Stropnik, 1999, 1-5). As population is ageing, there are more and more old people involved in politics or are being members of national parliaments. Consequently, specific laws and social measures confirmed by the parliaments are more in favour of older than younger people, which is reflected also in a relatively lower unemployment of old people. Since their share is relatively increasing in total workforce, the general unemployment is decreasing (Hughes, 2011).
Older unemployed people are compared to the young ones more likely to switch from unemployment or sickness benefits to disability or to early retirement which takes them out of the labour force and thus reduces unemployment (McDougall, 2010; Lammers et al., 2013).
Young people do not have these possibilities or are these possibilities much less likely to take place. Bratberg et al. (2004) in a study of a Norwegian early retirement program found out that at least 50 % of the early retirement program retirees would have stayed in the labour force without that program. However, removing older workers from labour force into retirement does not reduce youth unemployment (Jousten et al., 2010; Samorodov, 1999).
Eriksson and Dan-Olof (2014) argue that young people have higher unemployment rate also since they are less likely to get a job because they have fewer work experiences compared to older people. Eriksson and Dan-Olof (2014) talk about stigma of "being without a job", which is primarily young job seekers stigma. Besides there are many other obstacles that young people face in the transition from education to work which additionally increase youth unemployment rates compared to older people (Weber and Lehtinen, 2014).

Finally, population ageing will in its final stage result in shrinking labour force when most of the baby-boomers will exceed their retirement age and exit labour force (Penger and Dimovski, 2007, 42). Eventually, there will come to a labour force shortage and shortage in critical organisational knowledge and managerial experience (CEDEFOP, 2012), which will result in reduced unemployment and increased labour cost (Jackson, 2011). Lisenkova et al. (2010) already noticed that the fall in population, and particularly working-age population in Scotland, has a depressing impact on economic activity. The required size of the annual net-migration needed to neutralize the adverse natural demographic changes is even higher than the current trends.

On the other hand, there are also channels through which population ageing *increases* population general rate of unemployment. In general, population ageing is increasing unemployment rate because older workers are less likely to find a job when losing one, compared to the younger workers. Older workers are less educated, less flexible; find it more difficult to move, to drive longer to the place of work, and to switch among different areas of work. They are less mobile in terms of geographic and sectorial mobility compared to younger workers (Dixon, 2003).

Chéron et al. (2013) confirms that job search by the unemployed falls with age. Older people are less motivated to look for a new job when being unemployed, since the time period in which employees benefit from a job is getting shorter with age. Consequently older people exhibit higher unemployment rates compared to younger ones, holding other things constant.

Older people are generally on average less educated (Čepar and Bojnec, 2008), so are older workers compared to the younger ones (Dolado, 2000; Dimovski and Žnidaršič, 2007, 2-15), and less educated workers have higher unemployment rates (Málaga et al., 2014; Zhang et al., 2015; Rapa, 2014; Gelagay, 2015) which again increases the unemployment rate of older populations.

On one hand, because older people tend to have higher salaries and many age related salary supplements due to the higher number of years of employment, they represent a higher labour cost to the employers. On the other hand they are also less productive which is also due to a higher risk for health issues (Börsch-Supan and Weiss, 2007; Conen et al. 2012; Auer and Fortuny, 2000). So employers will prefer to hire younger workers who are generally cheaper and more productive (Skirbekk, 2003). Consequently unemployment of older workers is higher and when the share of old people is increasing in total workforce, the general rate of unemployment must increase too. Higher unemployment among older people compared to the general unemployment rate in European Union is found also by Laporšek and Dolenc (2011).

Michaelis and Debus (2010) argue that an increase in the relative number of older workers might have no effect on unemployment rate of old workers. However, if unions negotiate higher wages for the old, the unemployment rate of the old will increase.

Another important channel through which population ageing influences unemployment is the change in demand structure. Each age group has its specificities in demand; we say that demand is also age specific. Young people tend to demand for some goods that are less interesting for old people and vice versa. We may expect an increasing demand for services in health care sector (Lešnik-Hren, 2003, 887), in education of adults and life-long learning and in leisure related sectors like tourism. Consequently demand in these sectors will expand and so will the demand for labour in these sectors. So, changes in age structure result in changes in the demand structure (Aigner-Walder and Döring, 2015). Furthermore, as the demand structure of the economy changes, a shift in labour force between industries should occur to meet the demand shift, but due to various labour market frictions, structural and frictional unemployment rates are likely to increase during that shift (Borsch-Supan, 2003; Fougere et al., 2007; Rausch, 2009). In Japan study, Katagiri (2012) also presents some evidence of the inability of labour force to adapt immediately to the changes in labour demand.

2.3 Impact of Population Ageing on Entrepreneurship

Some studies show that population ageing might negatively affect entrepreneurial activity, since age is supposed to negatively affect entrepreneurial activity. Liang (2014) argues that creativity may decline with age, but business skills increase with experience in high level positions. However, having too many older workers in society slows entrepreneurship. Not only are older workers less innovative less educated and less creative.

When older workers occupy key positions they block younger workers from acquiring business skills. In his study, Liang (2014) found out that a one-standard deviation decrease in the population median age increases the new business growth by 2.5 percentage points. Besides, older societies have lower rates of entrepreneurship at every age. Many different researches also confirm the close interrelation between entrepreneurship and unemployment. New enterprises create new jobs and consequently reduce unemployment (Startiene and Remeikiene, 2009). If entrepreneurship is really less present in older societies that also means that older societies will have higher unemployment rates.

On another hand population ageing might positively affect entrepreneurial activity. That could be a consequence of the new business opportunities arising from the particular demand and needs of the growing population of people who are over 50 years old. These new market opportunities

are also referred to as silver economy which is related not only to private consumer expenditure but also to public expenditure. In any case, the sliver economy, which provides opportunities for new jobs also in the field of healthy ageing, senior tourism and age-friendly housing, has been growing substantially (European Commission, 2015).

Since we know that population ageing might increase unemployment, we can observe impact of population ageing on entrepreneurship also indirectly through changes in unemployment. In some cases, the state supports the foundation of businesses by the unemployed (Hinz and Jungbauer-Gans, 1999), so we might find a positive impact of unemployment on entrepreneurship through government incentives for the unemployed who decide to start their own business as also through some other channels like increased motivation to find a way out of unemployment (Thurik, 2003; Thurik and Verheul, 2003; Thurik et al., 2008; Rabarijaona, 2015). Thus, population ageing might indirectly (through an increased unemployment) increase entrepreneurial activity. Yet, on another hand, Marič et al. (2013) in their regression analysis cannot confirm that unemployment rate has statistically significant influence on entrepreneurial activity.

Obviously there is a vast body of empirical research which has been published so far presenting various examples of population ageing impact on unemployment and entrepreneurial activity. Some investigations prove that population ageing is increasing unemployment and worsening labour market conditions; while other researches confirm that in some cases population ageing decreases unemployment. Similarly the influence of population ageing on entrepreneurship is found to be positive in some cases and negative in the other. Depends on the sum of all the effects working through different channels and specific socio-economic circumstances a particular population is faced with.

Based on evidence derived from our own quantitative study on data for Slovenia, we wanted to test whether we can present additional evidence which would support those who prove the positive or those which prove the negative impact of population ageing on unemployment and/or entrepreneurial activity.

There are also many other different consequences of population ageing, apart from those mentioned in that literature review and that have also been explored in different contexts and different relations (Obadić and Smolić, 2008; Pešić, 2009). Population ageing affects public as well as private sector which further on affects investment, pension system, public health care system, tax rates and wage growth. Countries with older workforce and higher share of retired people have lower rate of savings which lowers the real value of money paid out from pension funds. Therefore, pension reform is urgently needed (Miles, 2005, 1-3). However, in the rest of the paper we are focusing on the empirical investigation of influence of population ageing on unemployment and entrepreneurial activity only.

3 Methods

In the following section we present the research hypotheses and the methodology which was used to achieve the goals of the research and to test the research hypotheses. Next we present the assumptions on which our research is based as well as its limitations in a sense of its scope, geographical limits and time frame. Finally the most important data used in this investigation is explained.

3.1 The Research Hypotheses

It is obvious from the studies mentioned at the beginning of the paper in Introduction and especially from the review of the relevant recent studies that there are many different consequences of population ageing for some economy, labour market and particularly for unemployment and entrepreneurial activity. In our research we wanted to statistically test the effects of population ageing on unemployment and entrepreneurial activity, using cross section data about 210 Slovenian municipalities in the chosen year 2009. Our *main research thesis* is: Population ageing is an important factor, which significantly unfavourably impacts labour market in Slovenia. In order to systematically test the main research thesis, we set the following two hypotheses.

Hypothesis 1: Older populations have higher unemployment rate.

Hypothesis 2: Older populations have lower entrepreneurial activity.

In our investigation, the expression "older population" is not used to describe some chosen age group of people in a static way. It is used in a comparative way in the following sense. A population of some municipality is older than the other if it has higher ageing index or higher average age. How are these two population ageing indicators calculated is shown in section "Data used". We simply wanted to empirically test if municipalities with higher ageing index or higher average age (municipalities which are older) also have higher unemployment rates and lower relative number of enterprises and how strong is this effect.

An observation unit in our case is a Slovenian municipality, a population which can be older or younger than the other and also different in the unemployment and entrepreneurial activity than the other. We can see from the review of the recent studies about the impact of population ageing on unemployment and entrepreneurship, in section which addresses literature review, that that impact could be very different. We believe that there is an unfavourable impact of population ageing on unemployment and entrepreneurship; and this is why we set these two hypotheses.

Using the regression analysis presented in the next section, we will be able to reject or to confirm our two hypotheses.

3.2 Quantitative Methodology Used

In order to test the main research thesis and the two hypotheses set, we run several regression models. First, we collected secondary data from the databases of Statistical office of Republic of Slovenia (SORS, 2011a; SORS, 2011b and SORS, 2011c) and Employment Service of Slovenia (ESS, 2011). The data refer to several demographic and economic variables by 210 Slovenian municipalities for the year 2009. So, observation units are Slovenian municipalities. The cross section data enable us to exclude any time related effects from the analysis, like economic slowdown and other changes which occur through time. More details about the data used are given in section "Data Used" below. The cross section demographic and economic data were properly arranged, transformed and entered into a statistical computer package SPSS, which was used for regression analysis.

First, bivariate and later also multivariate linear and log-linear regression models were conducted in order to analyse the connection between variables which measure population age structure and variables which measure labour market conditions in Slovenia.

Variables, which measures labour market conditions in Slovenia were used as dependent variables and variables, which measure population age structure were used as explanatory variables. We set assumptions about the relationships and association among several different variables used and set regression models which were tested on the available data about the Slovenian municipalities.

Using regression analysis we estimated parameters of the models and chose the best fitting models based on the standard error of the models, adjusted determination coefficient, F-tests and t-tests. In the regression analysis, some control variables were employed too, in order to eliminate their effects from the explanatory power of the demographic variables.

In order to test the first hypothesis the following general regression model was tested:

- *registered unemployment rate = f(constant; population ageing indicators; control variables; error term μ)*

In order to test the second hypothesis the following general regression model was tested:

- *number of enterprises per 100 population = f(constant; population ageing indicators; control variables; error term μ)*

3.3 Research Assumptions and Limitations

Assumptions of our investigation are mostly related to the indicators which are used to measure population ageing and labour market conditions. We also assume that relative number of enterprises is positively and rate of registered unemployment is negatively associated with labour market conditions.

Limitations of our investigation narrow the scope of investigation and address some methodological problems. Most important limitations are the following. The research is conducted using data for all Slovenian municipalities; consequently, the results of the research are valid for the whole Slovenia. However, generalisation of those results on other countries is limited due to the specificities of those other countries. When analysing unemployment we used data on registered unemployment only, which are available by particular years and municipalities.

The survey unemployment data (ILO) were not used, since they are available for the whole aggregate level of Slovenia only. When we used control variables, the size of a municipality was measured by the number of its population and the gross investment by the number of enterprises. Due to the data confidentiality, the data on gross investment by municipalities were not available. Entrepreneurial activity is interpreted in a narrow sense only and is quantified with the relative number of enterprises. There are many other factors of unemployment and entrepreneurial activity apart from those analyzed in our study. However in this study we focus on population ageing only as a factor of unemployment and entrepreneurial activity.

3.4 Data Used

All secondary data were collected from the databases of Statistical office of Republic of Slovenia (SORS, 2011a; SORS, 2011b and SORS, 2011c) and Employment Service of Slovenia (ESS, 2011). The data refer to several demographic and economic variables by 210 Slovenian municipalities for the year 2009. The exact web links to the statistical databases are in the reference list at the end of the paper next to the corresponding reference.

Demographic data

Demographic data were mostly used to measure population ageing. Below is a list of demographic data used in regression analysis.

- *Average population age* is defined as a weighted arithmetic mean of a certain group of people (SORS, 2002). It is calculated as:

$$X = \frac{\sum (x + 0{,}5) * P_x}{\sum P_x}$$

where:
X – average population age
x – age or one-year age group
P_x – number of people who are x years old

- *Ageing index* is calculated as the number of persons 65 years old or over per hundred persons under age 15 (SORS, 2002):

$$A_I = \frac{P_{(65+)}}{P_{(0-14)}} * 100$$

where:
A_I – ageing index
$P_{(65+)}$ – population 65 years old or over
$P_{(0\text{-}14)}$ = population under age 15

- *Natural population increase* per 1,000 population is the rate between the difference between the number of live births and the number of deaths of a chosen area in a chosen calendar year in a numerator and the number of population in the middle of the same year and of the same area in the denominator multiplied by 1,000 (SORS, 2002):

$$ni = \frac{NI}{P_{(30.6.)}} * 1000$$

where:
ni - natural population increase per 1,000 population
NI – absolute natural increase (difference between number of live births and deaths)
$P_{(30.6.)}$ - the number of population on June the 30th of a chosen year

Data on labour market

The data below were used in a regression analysis to measure labour market conditions.

- *Registered unemployment rate* is defined as the ratio between the number of registered unemployed people and economically active population multiplied by 100 (SORS, 2014):

$$U_{\%} = \frac{\sum P_{(reg.unempl.)}}{\sum P_{(working)} + P_{(reg.unempl.)}} * 100$$

where:
$U_{\%}$ - registered unemployment rate
$P_{(reg.\ unempl.)}$ – number of registered unemployed population
$P_{(working)}$ – number of working population

- *The number of enterprises per 100 population in a municipality.* In bigger municipalities one would expect more enterprises than in smaller municipalities. We measured the size of a municipality by the number of population in a municipality. In order to eliminate the effect of different sizes of municipalities on the number of enterprises, we calculated a relative measure so that we divided the absolute number of enterprises in a chosen municipality by the number of total population that municipality and multiplied the ration by 100.

$$\text{ENT per 100 pop.} = \frac{ENT_x}{P_{(x,31.12.)}} * 100$$

where:
ENT per 100 pop. - the number of enterprises per 100 population in a municipality x
ENT_x – the number of all enterprises in a municipality x
$P_{(x,\ 31.12.)}$ – the number of total population in a municipality x

Control variables

In our regression analysis, we included additional independent variables in order to control for the "size of the municipality" (measured by the number of population), "the existence of a university in a municipality" and "the number of enterprises in a municipality". By the size of the municipality we tried to capture the positive synergies and economies of scale that may occur in bigger municipalities. By the existence of an university in a municipality we wanted to capture the positive effects of the availability and accessibility of higher education and the many other positive effects of an university on the local environment. By the number of enterprises we wanted to capture the economic activity by municipalities. When analysing the dependence of economic welfare on the population ageing, we wanted to test, whether the presence of the control variables changes the results of the regression analysis or not.

4 Econometric Results

In order to test each of the two hypotheses we run several bivariate and multivariate linear and logarithmic regressions. The latter ones were actually linear regressions (linearized logarithmic regressions) too, only with logarithmically transformed data. In all the regression models we analysed the explanatory power of the independent explanatory demographic variables as well as the strength and the direction of the association between the dependent variable (indicator of unemployment) and dependent vari-

able (indicator of population ageing). Using regression and correlation coefficients we tested the existence and the direction (positive/negative) of the association and impact that was assumed for each factor in each hypothesis. Using adjusted determination coefficient we wanted to test the share of the variance that could be explained by the independent variables. On the basis of t-test results we tested statistical significance of each individual explanatory variable, where on the basis of F-test results we tested statistical significance of the regression model as a whole. During regression analysis we run many different models, however only those which were significant and those with highest explanatory power were selected for interpretation in this paper. A similar procedure was repeated, when also control variables were entered into the above regression models. After control variables were entered into the initial regression models, we checked if the direction of the influence or statistical significance or the explanatory power of the explanatory demographic variable were changed or not and again for final interpretation used the most appropriate models. The various theoretical views and interpretations of the other researchers were thus upgraded with our own original empirical findings regarding the interrelation between population ageing and economic welfare.

4.1 Results of the regression analysis of the first hypothesis

Hypothesis 1: Older populations have higher unemployment rate.

We run several linear and non-linear regression models where the rate of registered unemployment (measuring one aspect of labour market) was a dependant variable and ageing index, populations average age (both measuring population ageing) together with some control variables were independent variables.

Our intention was not to find all the factors that influence registered unemployment, but to show that population ageing is one of them and this is why we started with bivariate models. Here we finally present some of the best models according to the statistical significance of the variables, adjusted determination coefficient value and statistical significance of the model as a whole. It soon turned out that, log-linear models show better results than models related to other mathematical functions. Model 1 is the regression model which includes explanatory variables with statistically significant coefficients presented in the first row of table 1; model 2 is the regression model which includes explanatory variables with statistically significant coefficients presented in the second row of table 1; model 3 is the regression model which includes explanatory vari-

Table 1: Regression models results - logarithm of the registered unemployment rate depending on the logarithm of the population ageing indicators and control variables

	Regression coefficient (β) (and exact significance levels in the brackets)			
	Model 1	**Model 2**	**Model 3**	**Model 4**
Constant	-0.137 (0.051)	-4.498 (0.000)	-4.019 (0,025)	-0.725 (0.032)
Log. of ageing index	0.532 (0.000)	/	/	0.670 (0.000)
Log. of average age	/	3.379 (0.000)	2.431 (0.016)	/
Log. of number of population	/	/	0.454 (0.000)	0.650 (0.000)
Log. of number of enterprises	/	/	-0.473 (0.000)	-0.618 (0.000)
F-test	22.698 (0.000)	30.732 (0.000)	15.799 (0.000)	18.515 (0.000)
Adjusted determination coefficient (R^2)	0.094	0.125	0.175	0.201

Dependent variable: Logarithm of registered unemployment rate
Number of units observed (N): 210
Source: own calculations based on the data collected from SORS, 2011a; SORS, 2011b; SORS, 2011c

ables with statistically significant coefficients presented in the third row of table 1 and model 4 is the regression model which includes explanatory variables with statistically significant coefficients presented in the fourth row of table 1; while the dependant variable is always logarithm of registered unemployment rate.

As we can see from regression analysis results in table 1, all the included independent variables in all four regression models are statistically significant (t-tests), while F-test shows that all four models as a whole are statistically significant too. Based on t-tests (sig.(t) < 0.05) and based on F-tests (sig.(F) < 0.05), we may always reject the null hypothesis that there is no influence of the logarithm of the population ageing indicator on the logarithm of the registered unemployment rate, taking almost no risk of making the type I error (which would be the incorrect rejection of a true null hypothesis). Thus we may conclude from all the four models that the population ageing has an influence on the registered unemployment rate in Slovenia.

Adjusted determination coefficient (adj.R^2) tells us how much of the variation of the logarithm of the registered unemployment rate could be explained by the variation of the logarithms of the in the model included population ageing indicators and control variables by the Slovenian municipalities (9.4% in the first model, 12.5% in the second model, 17.5% in the third model and 20.1% in the fourth model).

We expected the determination coefficients not to be too high, since there are obviously many other factors of registered unemployment rate, which were not included into the regression analysis. However our main purpose was simply to show that population ageing itself has some significant impact on registered unemployment rate even when control variables (the size of a municipality measured by the number of population and the number of enterprises) are included like in the model 3 and model 4. According to the regression analysis results, higher number of enterprises decrease registered unemployment rate, while higher number of people (probably because such population is older) increases the registered unemployment rate.

When ageing index is increased by 1%, the registered unemployment rate is increased on average by 0.532% (model 1) or by 0.670% holding other variables constant when control variables are included (model 4). The ageing index recorded in 2009 in Slovenia was 116, meaning that there were on average 116 persons who are 65 years old or over per hundred persons under age 15.

When average age is increased by 1%, the registered unemployment rate is increased on average by 3.379% (model 2) or by 2.431% holding other variables constant when control variables are included (model 3). The average age of Slovenian population recorded in 2009 in Slovenia was 41.2 years.

4.2 Results of the regression analysis of the second hypothesis

Hypothesis 2: Older populations have lower entrepreneurial activity.

Also in order to test our second hypothesis we run several regression models; however we present here only those which were most statistically significant and consistent. Model 1 is the final regression model which includes explanatory variables with statistically significant coefficients presented in the first row of table 2; model 2 is the final regression model which includes explanatory variables with statistically significant coefficients presented in the second row of table 2; and model 3 is the final regression model which includes explanatory variables with statistically significant coefficients presented in the third row of table 2. The dependant variable is always (logarithm) of the number of enterprises per 100 population. The methodological reasoning for the choice of the three presented models was the same as in case of the first hypothesis.

Adjusted determination coefficient (adj.R^2) tells us how much of the variation of (the logarithm of) the number of enterprises per 100 population could be explained by the variation of (the logarithms of) the in the model included population ageing indicators and control variables by the Slovenian municipalities (1.9% of the variation in model 1, 11.9% in model 2 and 16.1% in model 3). Again, we expected the determination coefficients not to be too high, since there are obviously many other factors of the number of enterprises per 100 population, which were not included into the regression analysis.

However our main purpose was simply to show that population ageing itself has some significant impact on the number of enterprises per 100 population even when control variable - the size of a municipality measured by the number of population - is included (model 2). According to the regression analysis results, bigger size of a municipality (measured by the number of people) increases the registered unemployment rate (table 2).

The beta regression coefficients from table 2 show the following. When average age is increased by 1%, the number of enterprises per 100 population is decreased on average by 1.7% (model 1). The average number of enterprises per 100 population recorded in 2009 in Slovenia was 6.4. When average age is increased by 1 year the number of enterprises per 100 population is decreased on average by 0.182, holding other variables constant (model 2).

When the number of population is increase by 1 person the number of enterprises per 100 population is increased on average by 3.239, holding other variables constant (model 2). When the natural population increase per 1,000 population is increased by 1% the number of enterprises per 100 population is increased on average by 0.86%

(model 3). The average natural population increase per 1,000 population recorded in 2009 in Slovenia was 1.479 persons.

5 Discussion

Based on the results of our empirical investigation we may answer our first research question by concluding that municipalities with higher population average age and higher ageing index have higher registered unemployment rate in Slovenia. That conclusion is drawn from the regression analysis. In order to test our first hypothesis, we also run multivariate regression models with control variables. Even, when the control variables are employed in the model, the direction of an influence of demographic variables on registered unemployment rate stays the same and the statistical significance is still ensured. Moreover, according to the regression analysis results, higher number of enterprises in a municipality results in lower registered unemployment, which is consistent also with some previous studies. We may *confirm our first hypothesis* that older populations have higher unemployment rate. Consequently they also have lower economic welfare.

The results of our research answer also our send research question about the impact of population ageing on entrepreneurial activity. If the average age is higher, the number of enterprises per 100 population is lower. Moreover, when natural population increase is higher, the number of enterprises per 100 population is higher too. We assume of course, that higher natural population increase is associated with younger populations.

When the control variables are entered into the regression models, the direction of an influence of demographic variables on the number of enterprises per 100 population stays the same and the statistical significance is still ensured. The control variable the size of a municipality (measured by the number of population in a municipality) has a positive influence on entrepreneurial activity, since bigger municipalities have positive effects of economies of scale, have better developed infrastructure and have other positive externalities which encourage entrepreneurship. Obviously we may *confirm our second hypothesis* that older populations have lower entrepreneurial activity. Consequently they also have lower economic welfare. Lower entrepreneurial activity also leads into lower number of new working places in such municipalities and therefore into higher registered unemployment rate, which is also consistent with some of the previous studies mentioned in the literature review.

The results of our research might be used as an empirical argument when developing basis for governing economic policy. The findings imply, that demographic processes significantly impact labour market, meaning that proper demographic policy might also be taken into account as an instrument of a labour market policy in a wider sense.

Table 2: Regression models results – (logarithm of) the number of enterprises per 100 population depending on (logarithm of) the population ageing indicators and control variables

	Regression coefficient (β) (and exact significance levels in the brackets)		
	Model 1	**Model 2***	**Model 3**
Constant	3.965 (0.005)	18.683 (0.000)	0.701 (0.000)
Logarithm of average age	-1.728 (0.025)	/	/
Average age	/	-0.182 (0.014)	/
The size of a municipality (the number of population)	/	3.239 (0.000)	/
Logarithm of the natural population increase	/	/	0.086 (0.000)
F-test	5.130 (0.025)	15,180 (0.000)	24.397 (0.000)
Adjusted determination coefficient (R^2)	0.019	0.119	0.161

*Dependent variable: Logarithm of the number of enterprises per 100 population (*In model 2 dependent variable is: The number of enterprises per 100 population)*
Number of units observed (N): 210
Source: own calculations based on the data collected from SORS, 2011a; SORS, 2011b; SORS, 2011c

6 Conclusion

From the literature review we can see that some studies reveal a negative and some a positive impact of population ageing on unemployment and entrepreneurial activity. Yet our research confirms our *main thesis* that population ageing is an important factor, which significantly unfavourably impacts labour market conditions in Slovenia and consequently economic welfare. First, through increasing unemployment and second, through decreasing entrepreneurial activity.

Most probably that could be explained by the lower flexibility of the ageing labour force, its higher labour cost, outdated knowledge and competencies, lower level of innovativity, creativity and higher aversion to risk taking. Thus we bring forward another empirical evidence of the unfavourable impact of population ageing on unemployment and entrepreneurial activity which is also consistent with some other previous research (Chéron et al., 2013; Málaga et al., 2014; Zhang et al., 2015; Rapa, 2014; Gelagay, 2015; Dixon, 2003; Conen et al. 2012; Fougere et al., 2007; Rausch, 2009; Katagiri 2012; Liang, 2014; Startiene and Remeikiene, 2009).

However on the other hand we may also find studies in the literature which imply the oppostite-that population ageing decreases unemployment and increases entrepreneurial activity (Bratić and Vukšić 2014; Eichhorst, 2013; Gervais et al., 2014; Bell, 2011; Cahuc et al., 2013; Dunsch et al., 2015; Hughes, 2011; McDougall, 2010; Lammers et al., 2013; Jousten et al., 2010; Eriksson and Dan-Olof, 2014; Jackson, 2011; Thurik et al., 2008; Rabarijaona, 2015). We must keep in mind that general rate of unemployment is actually a weighted average of the unemployment rate of old and unemployment rate of young, so it depends not only on both partial unemployment rates, but also on the population's age structure.

And that population age structure is changing in when population ageing takes place. Both, unemployment and entrepreneurial activity obviously have many partial factors in behind which work in different directions. So how will unemployment or entrepreneurial activity finally change, when population is ageing, depends on the final "sum" of the different directions of impacts of all different factors.

Moreover, our findings are not only about the direction of the impact (positive/negative) but also offer detailed quantitative measures of the strength and significance of the partial influences of the population ageing on unemployment and entrepreneurship.

We see the findings of our study as another proof, that younger populations are still more competitive in terms of human capital, compared to the old ones, meaning that population ageing, holding other things constant, is a negative process, which negatively affects a society's economic welfare and wellbeing. In this context higher fertility and higher number of children per family would mean higher and not lower prosperity and welfare in a long run as it is speculated sometimes.

The main scientific contribution of this research are the original findings regarding the strength and the direction of the influence of population ageing indicators on unemployment and entrepreneurial activity based on all 210 Slovenian municipalities in a chosen year.

Challenges for our further investigation are broadening the scope of the research also with inclusion of other indicators of economic and non-economic welfare like culture, recreation, psychological health, the level of social care, free time; and with an analysis of the dynamics of the influence of population ageing on economy over longer period of time based on time series data. Another interesting question is why such phenomenon as population ageing occurs, which could be further investigated also within a qualitative research searching for the background causes for the critical development of population ageing factors.

References

Aigner-Walder, B., & Döring, T. (2015). The effects of population ageing on private consumption – a simulation for Austria based on household data up to 2050. *Eurasian Economic Review,* 2(1), 63-80.

Auer, P., & Fortuny, M. (2000). *Ageing of the Labour Force in OECD Countries: Economic and Social Consequences*. Geneva: International Labour Office.

Bell, D.N.F., & Blanchflower, D. G. (2011). Young people and the Great Recession. *Institute for the Study of Labor (IZA)* Discussion Paper, No. 5674. Retrieved October 5, 2015 from http://ftp.iza.org/dp5674.pdf

Borsch-Supan, A. (2003). Labor market effects of population aging. *Review of Labour Economics and Industrial Relations*, 17(1), 5–44, http://dx.doi.org/10.1111/1467-9914.17.specialissue.2

Börsch-Supan A., & Weiss, M. (2007). Productivity and age: Evidence from work teams at the assembly line. MEA *Discussion Paper* 148-2007, MEA – Munich Center for the Economics of Aging.

Bratberg, E., Holmås, T.H., & Thøgersen, Ø. (2004). Assessing the effects of an early retirement program. *Journal of Population Economics*, 17(3), 387-408, http://dx.doi.org/10.1007/s00148-003-0165-y

Bratić, V., & Vukšić, G. (2014). Fixed-term employment during transition: the Croatian experience. *Eastern European Economics,* 52(6), 57–76, http://dx.doi.org/10.1080/00128775.2014.1003507

Cahuc, P., Carcillo, S., Rinne, U., & Zimmermann, K. F. (2013). Youth unemployment in old Europe: the polar cases of France and Germany. *Institute for the Study of Labor (IZA)* Discussion Paper, No. 7490. Retrieved 14.10.2015 from http://ftp.iza.org/dp7490.pdf

Chéron, A., Hairault, J.-O., & Langot, F. (2013).

Life-Cycle Equilibrium Unemployment. *Journal of Labor Economics*, 31(4), 843-882, http://dx.doi.org/10.1086/669941

Conen, W. S., van Dalen, H.P., & Henkens, K. (2012). Ageing and employers' perceptions of labour costs and productivity: A survey among European employers. *International Journal of Manpower*, 33(6), 629 – 647, http://dx.doi.org/1108/01437721211261796

Čepar, Ž. & Bojnec, Š. (2008). Population aging and the education market in Slovenia and Croatia. *Eastern European Economics,* 46 (3), 68-86.

Dimovski, V., & Žnidaršič, J. (2007). Ekonomski vidiki staranja prebivalstva Slovenije: Kako ublažiti posledice s pristopom aktivnega staranja [Economic aspects of population ageing in Slovenia: How to mitigate the consequences with an active ageing approach]. *Kakovostna starost*, 10 (1), 2-15.

Dixon, S. (2003). Implications of population ageing for the labour market, in *Labour Market trends,* edited by A. Flowers, 67-76. London: Organisation for Economic Co-operation and Development.

Dolado, J.J., Felgueroso, F., & Jimeno, J.F. (2000). Youth labour markets in Spain: Education, training, and crowding-out. *European Economic Review*, 44(4-6), 943-956, http://dx.doi.org/10.1016/S0014-2921(99)00050-1

Dubska, D. (2010). Nova paradigma – zakaj je pomembno, da se meri napredek družbe? [The new paradigm-why is important to measure the progress of society?]. *Statistical days*. Http://www.stat.si/StatisticniDnevi/Docs/Radenci%202010/Dubska_New%20paradigm-prispevek.pdf (5.3.2011).

Dunsch, S. (2015). Okun's law and youth unemployment in Germany and Poland. European University Viadrina Frankfurt (ODER), Department of Business Administration and Economics, *Discussion Paper* No. 373. Retrieved October 8, 2015 from https://opus.zbw-kiel.de/dspace/bitstream/10419 /120898/1/835448711.pdf

Eichhorst, W., Hinte, H., and Rinne, U. (2013). Youth Unemployment in Europe: What to Do about It? *Institute for the Study of Labor (IZA)* Policy Paper, No. 65. Retrieved October 5, 2015 from http://hdl.handle.net/10419/91749

Employment Service of Slovenia (ESS). (2011). *Trg dela: Trg dela v številkah* [*Labour market: Labour market in figures*]. Retrieved February 2, 2015 from http://www.ess.gov.si/trg_dela/trg_dela_v_stevilkah

European Centre for the Development of Vocational Training-CEDEFOP. (2012). *Working and ageing. The benefits of investing in an ageing workforce*. Luxembourg: Publications Office of the European Union.

Eurostat. (2015). *Database, Population and social conditions, Labour market, Unemplyoment, Unemployment rate by sex and age groups - annual average, %.* Retrieved October, 23, 2015 from http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do

Eriksson, S., & Dan-Olof, R. (2014). Do Employers Use Unemployment as a Sorting Criterion When Hiring? Evidence from a Field Experiment. *American Economic Review*, 104(3), 1014-39, http://dx.doi.org/10.1257/aer.104.3.1014

European Commission. (2015). *Growing the European Silver Economy.* Background Paper. Brussels: European Commission. Retrieved October, 22, 2015 from http://ec.europa.eu/research/innovation-union/pdf/active-healthy-ageing/silvereco.pdf#view=fit&pagemode=none

Fougere, M., Mercenier, J., & Merette, M. (2007). A sectoral and occupational analysis of population ageing in Canada using a dynamic CGE overlapping generations model. *Economic Modelling*, 24(4), 690–711, http://dx.doi.org/10.1016/j.econmod.2007.01.001

Gelagay, A. (2015). Factors affecting African American and Latin students' persistence in adult education programs. Doctoral dissertation, California State University, East Bay, United States of America.

Gervais, M., Jaimovich, N., Siu, H.E., & Yedid-Levi, Y. (2014). What Should I Be When I Grow Up? Occupations and Unemployment over the Life Cycle. Working Paper No. 20628. *The National Bureau of Economic Research (NBER)*. NBER Program: EFG, http://dx.doi.org/10.3386/w20628

Hinz, T., & Jungbauer-Gans, M. (1999). Starting a business after unemployment: characteristics and chances of success (empirical evidence from a regional German labour market). *Entrepreneurship & Regional Development: An International Journal*, 11(4), 317-333, http://dx.doi.org/10.1080/089856299283137

Hughes, N. (2011). Young People Took to the Streets and all of a Sudden all of the Political Parties Got Old: The 15M Movement in Spain. *Social Movement Studies,* 10 (4), 407-413, http://dx.doi.org/10.1080/14742837.2011.614109

Jackson, N. (2011). *The demographic forces shaping New Zealand's future. What population ageing [really] means*. Waikato: The University of Waikato: National Institute of Demographic and Economic Analysis.

Jousten, A., Lefèbvre, M., Perelman, S., & Pestieau, P. (2010). The Effect of early retirement on youth unemployment. Chapter in The National Bureau of Economic Research *(NBER)* book *Social Security Programs and Retirement around the World: The Relationship to Youth Employment* ed. by Jonathan Gruber, J. & Wise, D. A. (p. 47 - 76). Chicago: University of Chicago Press.

Katagiri, M. (2012). Economic Consequences of Population Aging in Japan: Effects through Changes in Demand Structure, *IMES Discussion Paper Series* from Institute for Monetary and Economic Studies, Bank of Japan, No 12-E-03.

Kurek, S., & Rachwał, T. (2011). Development of entrepreneurship in ageing populations of The European Union. *Procedia Social and Behavioral Sciences*,

19(2011), 397–405, http://dx.doi.org/10.1016/j.sbspro.2011.05.147

Lammers, M., Bloemen, H., & Hochguertel, S. (2013). Job search requirements for older unemployed: Transitions to employment, early retirement and disability benefits. *European Economic Review*, 58, 31-57, http://dx.doi.org/10.1016/j.euroecorev.2012.11.003

Laporšček, S., & Dolenc, P. (2011). Flexicurity in the European Union and Slovenia. *Organizacija*, 44(2), 72-84.

Layard, R., Nickell, S., & Jackman, R. (2005). *Unemployment: Macroeconomic Performance and the Labour Market. Second Edition*. New York: Oxford University Press.

Lešnik-Hren, J. (2003). Perspektive javnih zdravstvenih zavodov [Perspectives of public healthcare institutions], In: *Management in razvoj organizacije*, edited by J. Florjančič, 886-890. Kranj: Moderna organizacija.

Liang, J., Wang, H., & Lazear, E.P. (2014). Demographics and Entrepreneurship. Working Paper No. 20506. *The National Bureau of Economic Research (NBER)*. NBER Programs: Industrial Organization (IO); Labor Studies (LS), http://dx.doi.org/10.3386/w20506

Lisenkova, K., McGregor, P. G., Pappas, N., Swales, J. K., Turner, K., & Wright R. E. (2010). Scotland the grey: a linked demographic–computable general equilibrium (CGE) analysis of the impact of population ageing and decline, *Regional Studies*, 44(10), 1351-1368, http://dx.doi.org/10.1080/00343400701654228

Málaga, R., Oré, T., & Tavera, J. (2014). Youth who neither work nor study: The Peruvian case. *Economía,* 37 (74), 95-132.

Malačič, J. (2008). Socialno ekonomske posledice staranja prebivalstva [Socioeconomic consequences of the population ageing], In: *Zdravniški vestnik*, edited by S. Markovič, 793-798. Ljubljana: Slovensko zdravniško društvo. Retrieved October 2, 2014 from http://www.szd.si/user_files/vsebina/Zdravniski_Vestnik/vestnik/st08-12/793-798.pdf

Mandič, S., & Filipovič-Hrast, M. (2011). Blaginja v starajoči se družbi: analitična izhodišča [Welfare in an ageing population: analytical basis], In: *Blaginja pod pritiski demografskih sprememb*, edited by Mandič, S., & Filipovič-Hrast, M. Knjižna zbirka Ost, 9, 7-25. Ljubljana: Fakulteta za družbene vede. Retrieved September 30, 2015 from http://knjigarna.fdv.si/knjige/sociologija/ost-osrednje-socioloske-teme/i_526_blaginja-pod-pritiski-demografskih-sprememb

Marič, M., Žnidaršič, J., Uhan, M., Dimovski, V., Ferjan, M., Djurica, M., Jeraj, M., & Janežič, M. (2013*)*. Country's Development as a Determinant of Early-Stage Entrepreneurial Activity. *Organizacija,* 46(3), 75-86, http://dx.doi.org/10.2478/orga-2013-0011

McDougall, R. (2010). Ageing populations and hidden unemployment. *Optimum Population Trust (OPT),* Population Matters, London. Retrieved October 15, 2015 from http://populationmatters.org/resources/articles-reports-papers/ageing/

Michaelis, J., & Debus, M. (2010). Wage and (un-)employment effects of an ageing workforce. *Journal of Population Economics*, 24(4), 1493-1511, http://dx.doi.org/10.1007/s00148-010-0325-9

Miles, D. (2005). Modelling the Impact of Demographic Change upon the Economy. *The Economic Journal,* 109 (452), 1-36, http://dx.doi.org/10.1111/1468-0297.00389

Obadić, A., & Smolić, Š. (2008). The economic and social consequences of population ageing process. *Ekonomska istraživanja*, 21 (2), 86-98.

Osberg, L., & Sharpe, A. (2011). *Comparisons of Trends in GDP and Economic Well-being – the Impact of Social Capital*, Retrieved October 15, 2015 from http://www.oecd.org/dataoecd/5/32/1824740.pdf

Penger, S., & Dimovski, V. (2007). Strategija aktivnega staranja prebivalstva Slovenije s poudarkom na kakovostnem staranju in medgeneracijskem sožitju [Active population ageing strategy in Slovenia with a special emphasis on quality ageing and intergenerational solidarity]. *IB revija (Ljubljana*) 41 (1), 42-55.

Pešić, M. (2009). Effect of the introduction of the HACCP international standard on an example in the food industry in Croatia. *Ekonomska istraživanja*, 22 (2), 132-147.

Rapa, D. (2014). An analysis of the possible determinants of youth unemployment in Malta. Doctoral dissertation, University of Malta, Faculty of Economics, Management and Accountancy, Department of Economics, Msida, Malta.

Rausch, S. (2009). *Macroeconomic Consequences of Demographic Change*. Modelling Issues and Applications. Berlin-Heidelberg: Springer. Http://dx.doi.org/10.1007/978-3-642-00146-8 (11.10.2015).

Samorodov, A. (1999). *Ageing and labour markets for older workers.* Geneva: International Labour Office.

Skirbekk, V. (2003). Age and individual productivity: a literature survey. *MPIDR Working Paper* WP 2003–028. Retrieved September 3, 2015 from https://www.google.si/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCYQFjAAahUKEwj6hLazrurIAhXHRhQKHd-oCAU&url=http%3A%2F%2Fwww.demogr.mpg.de%2Fpapers%2Fworking%2Fwp-2003-028.pdf&usg=AFQjCNG-lK_T1TX0WBUOG_u_BCjSeJzX3w&cad=rja

Stanovnik, T., & Stropnik, N. (1999). Economic Well-being of the Elderly and Pension Reform in Slovenia. *Economic Well-being of the Elderly and Pension Reform: Final Research Report,* (2), 25-61. Retrieved October 26, 2015 from http://www.ier.si/files/Working%20paper-02.pdf

Startiene, G., & Remeikiene, R. (2009). The Influence of Demographical Factors on the Interaction between En-

trepreneurship and Unemployment. *Engineering Economics*, 64(4), 60-70.

Statistical Office of the Republic of Slovenia (SORS). (2002). Demographic Indicators and the Methods of their Calculation. In *Population of Slovenia 2000*. Retrieved July 7, 2015 from http://www.stat.si/doc/pub/rr776-2002/met_izracun/izracun.htm

Statistical Office of the Republic of Slovenia (SORS). (2011a). *SI-Stat Data Portal, Data by municipalities, Demography and social statistics, Population - selected indicators, municipalities, Slovenia, half-yearly.* Retrieved February 2, 2015 from http://pxweb.stat.si/pxweb/Dialog/varval.asp?ma=05C4008S&ti=&path=../Database/Dem_soc/05_prebivalstvo/10_stevilo_preb/20_05C40_prebivalstvo_obcine/&lang=2

Statistical Office of the Republic of Slovenia (SORS). (2011b). *SI-Stat Data Portal, Data by municipalities, Economy, Enterprises by municipalities, Slovenia, annually.* Retrieved February 3, 2015 from http://pxweb.stat.si/pxweb/Dialog/varval.asp?ma=1418807E&ti=Enterprises+by+municipalities%2C+Slovenia%2C+annually&path=../Database/Economy/14_business_subjects/01_14188_Enterprises/&lang=1

Statistical Office of the Republic of Slovenia (SORS). (2011c). *SI-Stat Data Portal, Data by municipalities, Demography and social statistics, Labour force, Persons in employment, registered unemployed persons and registered unemployment rates by municipalities of residence, Slovenia, monthly.* Retrieved February 3, 2015 from http://pxweb.stat.si/pxweb/Dialog/varval.asp?ma=0700960E&ti=&path=../Database/Demographics/07_labour_force/05_labour_force_register/01_07009_aktivno_preb_mesecno/&lang=1

Statistical Office of the Republic of Slovenia (SORS). (2014). *Methods and classifications, Methodological explanations, Labour market, Employees, Self-Employed and Unemployed, Labour force, Slovenia.* Retrieved August 8, 2015 from http://www.stat.si/statweb/Common/PrikaziDokument.ashx?IdDatoteke=8321

Statistical Office of the Republic of Slovenia (SORS). (2015). *SI-Stat Data Portal, Demography and social statistics, Number of Population, Number of Population, statistical regions, Population - selected indicators, statistical regions, Slovenia, half-yearly.* Retrieved April 4, 2015 from http://pxweb.stat.si/pxweb/Dialog/varval.asp?ma=05C2008S&ti=&path=../Database/Dem_soc/05_prebivalstvo/10_stevilo_preb/10_05C20_prebivalstvo_stat_regije/&lang=1

Thurik, A. R. (2003). Entrepreneurship and Unemployment in the UK. *Scottish Journal of Political economy*, 50(3), 264-290, http://dx.doi.org/10.1111/1467-9485.5003001

Thurik, A. R., & Verheul, I. (2003). The relationship between entrepreneurship and unemployment: the case of Spain, in Geneseca, E., Urbano, D., Capelleras, J.L., Guallarte, C., Verges, J. (eds.), *Creacion de Empresas, Entrepreneurship*. Barcelona, Spain: Servei de Publicacions de la UAB.

Thurik, A. R., Caree, M. A., van Stel, A., & Audretsch, D. B. (2008). Does self-employment reduce unemployment? *Journal of Business Venturing*, 23(6), 673–686, http://dx.doi.org/10.1016/j.jbusvent.2008.01.007

United Nations. (2006). *World population prospects 2006*. New York: United Nations.

United States Census Bureau. (2011). *International Data Base.* Retrieved February 3, 2011 from http://www.census.gov/ipc/www/idb/country.php

Wach, K. (2015). Entrepreneurial Orientation and Business Internationalisation Process: The Theoretical Foundations of International Entrepreneurship. *Entrepreneurial Business and Economics Review, 3*(2), 9-24, http://dx.doi.org/10.15678/EBER.2015.030202

Watson, D., F. Pichler, & Waallace, C. (2010). Subjective Well-being in Europe: Second European Quality of Life Survey, Luxembourg: Office for Official Publications of European Communities.

Weber, S. & Lehtinen, E. (2014). Transition from School-to-Work and its challenges. *Unterrichtwissenschaft,* 42 (3), 194-205.

Zhang, M. M., Peppas, S., Peppas, S., & Yu, T. T. (2015) The great recession: a statistical analysis of its effects on unemployment. *International Journal of Business & Economics Perspectives*, 10(1), 44-54.

Marjetka Troha Akanni received her Bachelor's degree from marketing in 2008 on Faculty of Management, University of Primorska. She also completed her Master's degree entitled Population ageing and economics welfare in Slovenia in 2012 on Faculty of Management, University of Primorska. Currently she is employed in Lekšan d.o.o.

Žiga Čepar received his Bachelor's degree in Economics, Finance in 2000 on Faculty of Economics, University of Ljubljana. In 2009 he defended his doctoral dissertation on Faculty of management, University of Primorska. Before entering an academic sphere he worked in Nova Ljubljanska banka d.d. in department for financial institutions and international. Currently he is employed at Faculty of Management, University of Primorska as an associate professor, where he teaches Economics of Enterprise, Microeconomics, Macroeconomics, Political Economics and International Economics on the undergraduate as well as on the postgraduate level. His research areas are demography, economics, education and labour market.

Vpliv staranja prebivalstva na brezposelnost in podjetniško aktivnost, primer Slovenije

Namen: Namen raziskave je proučiti vpliv staranja prebivalstva na brezposelnost in podjetniško aktivnost v Sloveniji, saj je to eden od pomembnejših problemov v starajoči se Evropi, ki ima številne posledice tako za ekonomsko kakor tudi za neekonomsko blaginjo.
Zgradba in metodologija: Najprej predstavljamo fenomen staranja prebivalstva ter pregled literature o vplivu staranja prebivalstva na brezposelnost in podjetniško aktivnost. Nato na presečnih podatkih po slovenskih občinah izvedemo multiplo regresijsko analizo. Uporabljeni so sekundarni podatki, zbrani iz statističnih baz Statističnega urada Republike Slovenije ter Zavoda Republike Slovenije za zaposlovanje o demografskih in ekonomskih spremenljivkah po 210 občinah za leto 2009.
Rezultati: Rezultati regresijske analize potrjujejo našo prvo hipotezo. Občine z višjim indeksom staranje ter višjo povprečno starostjo imajo tudi višjo registrirano stopnjo brezposelnosti. Če je indeks staranja (povprečna starost) višji(višja) za 1%, je stopnja registrirane brezposelnosti višja v povprečju za 0,532% do 0,670% (za 2,431% do 3,379%) ob ostalih nespremenjenih pogojih. Naša regresijska analiza potrjuje tudi našo drugo hipotezo. Občine z višjo povprečno starostjo imajo tudi manjše število podjetij na 100 prebivalcev. Če je povprečna starost višja za 1% (za 1 leto), je število podjetij na 100 prebivalcev nižje v povprečju za 1,7% (za 0,182 podjetja) ob ostalih nespremenjenih pogojih.
Zaključek: Sklenemo lahko, da staranje prebivalstva, brez ustreznih ukrepov posledično vodi v nižjo ekonomsko blaginjo. To pa dodatno izpostavlja pomen ustrezne demografske in socialne politike pri vodenju politike trga dela.

Ključne besede: *brezposelnost; podjetništvo; staranje prebivalstva; trg dela; slovenske občine*

DOI: 10.1515/orga-2015-0021

The Impact of Demographic Changes on the Organization of Emergency Medical Services: the Case of Slovenia

Tatjana Kitić Jaklič[1], Jure Kovač[2]

[1]General Medical Practice Activities of the Gorenjska Region, Kranj,
Community Health Centre, Gosposvetska ulica 10, 4000 Kranj, Slovenia
tkitic@gmail.com

[2]University of Maribor, Faculty of Organizational Sciences, Kidričeva cesta 55a, 4000 Kranj, Slovenia
jure.kovac@fov.uni-mb.si

Background and Purpose: The modern environment requires that organizations (profit and non-profit) continually harmonize their organizational models with changes in their respective environments and with their own visions and strategies for further development. The organizational structure of Emergency Medical Services (hereinafter EMS) is currently a very topical issue in Slovenia, given that a project to establish a new organization of EMS is currently underway at the national level. By examining the case of one region in Slovenia, this article presents an analysis of factors that impact on the number and types of EMS activities and depicts a forecast of future trends for the requirement of EMS. The analysis presents the initial phase of a strategic planning process for the mentioned activity and consequently, a starting point for the formation of an organizational EMS model.
Methodology: This article presents an analysis of factors that impact on the formulation of an EMS model on the basis of research carried out for one geographical region of Slovenia. For the previous period, data was collected from 2002 to 2014. The software tool used for the analysis was STATA 13.0. For the purpose of forecasting a five-year period trend we used statistical package RStudio and Hyndman´s Forecast package given that this package contains algorithms for forecasting univariate time series including exponential smoothing using automated spatial models and ARIMA modelling.
Results: The research has confirmed a correlation between social/environmental factors and the rate of increase in the demand for EMS. A population´s age structure has been identified as the key social factor that increases the need for EMS. On the basis of this finding, this article presents a model for forecasting growth trends in the scope of EMS activities.
Conclusion: The research study has identified some important elements that are imperative to take into consideration when formulating an EMS network at the prehospital level. Population ageing has emerged as a key social factor. In the accordance with forecasted trends, an increase in the burden placed on EMS activities may also be anticipated in the future.

Keywords: *strategic planning, foresight, trends, emergency medical services (EMS), organizational model*

1 Introduction

Healthcare systems across the world face major challenges, with all developed countries being subject to a list of unfavourable external trends that include demographic changes, incredibly rapid technological development, rising user demand for healthcare services and rising health-related costs in the context of the global financial crisis (Walshe and Smith, 2011, pg. 3). In addition to these factors, a number of trends that reflect the socio-economic situation in our society should also be highlighted. These include globalization, which has a decisive impact on the

Received: July 16, 2015; revised: August 28, 2015; accepted: October 2, 2015

international migration of populations in different parts of the world, global financial and geopolitical upheavals, various crisis situations due both to natural disasters as well as various political and other social conflicts, urbanization and environmental degradation (Rodriguez-Garcia, 2001; Ramani et al., 2008, pp. 16 - 18; Bufon, 2014, pp. 9 - 32).

The above described problems and challenges faced by healthcare institutions are therefore not new. Since the 1980s, there has taken place an intensive debate on the issue of how to increase the efficiency of various public enterprises and other non-profit organizations in a rapidly changing environment. The primary goal of providers as well as others involved in the healthcare system is to improve the services that are on offer to patients. The most important value is understood to be a positive treatment outcome, which we also strive to achieve through the provision of financial sustainability.

Solutions to improve the efficiency of healthcare institutions began being sought in management theories and management best practices of for-profit organizations. Due to an increase in the efficiency and quality of service provision, the introduction of modern management methods has become a necessity (Kowalczyk, 2002; Berwick et al., 2008; Hedegaard and Ahl, 2012; Kuhlmann and von Knorring, 2014).

An integral component of healthcare includes emergency medical services (hereinafter 'EMS'). This is a public service that performs medical treatment for suddenly sick or injured individuals and is an integral component of the public healthcare network at the primary (prehospital) and secondary levels of health care. Over the past twenty years, researchers from most developed countries report on coming to terms with trends that reflect an increase in the number of EMS treatments performed, particularly as a consequence of negative demographic trends, epidemiological and social changes (Fischer et al., 2000; Cabrera et al., 2011). From this perspective, it is therefore necessary to understand current trends towards the reorganization of the EMS system, which we are also witness to in our environment. The modern and carefully constructed EMS system, particularly at the primary level, is without doubt a condition for better treatment outcomes and lower healthcare costs in the continuing care provided by all other levels of the healthcare system.

This paper focuses on an analysis of the impact of social factors in the number and type of required EMS treatments by examining the case of one Slovenian region, which also represents the starting phase for the strategic planning of an EMS organizational model. The analysis was carried out for the Gorenjska region in such a way as to further enable the transfer of the model to the national level.

The aim of the research is to formulate a proposal for the creation of an EMS organizational model that will enable the efficient use of human and other resources and that will also enable the achievement of efficient and effective health care from the perspective of the health care industry, health care providers and patients. The primary goal of this research is to predict trends for the next five-year period with the help of extrapolation methods and to determine the impact of demographic population changes as regards the provision of EMS activities.

2 Theoretical Background

2.1 Strategic Planning in Healthcare

The greatest problem faced by managers today is that they must be able to foresee the future development of their own organization within the complex environment in which it operates and on the basis of understanding specific trends and the development of related factors. In the framework of strategic management (or strategic planning), various instruments, methods, techniques and approaches for managing an increasingly more complex environment have recently been developed (Varkey and Bennet, 2010; Rodríguez Perera and Peiró, 2012). The purpose of strategic planning is to encourage organizations towards strategic thinking, working and learning (Bryson, 2004, pg. 27).

A strategic approach places an emphasis on analysis over own resources and trends within the environment. On the basis of this mutual analysis, long-term directions for the successful development of an organization are shaped by a strategic approach (Hitt et al., 2009; Robbins and Coulter, 2009; Daft, 2010; Bleicher, 2011).

The process of strategic planning is made up of several interrelated steps or phases (Bryson, 2004; Varkey and Bennet, 2010; Rodríguez Perera and Peiró, 2012). According to Bryson, the process of strategic planning can be demonstrated more clearly and comprehensively by the following ten steps (Bryson, 2004, pp. 32-34): Step 1 – Initiate and agree on a strategic planning process, Step 2 – Identify organizational mandates, Step 3 – Clarify organizational mission and values, Step 4 – Assess the external and internal environments to identify strengths, weaknesses, opportunities and threats, Step 5 – Identify strategic issues faced by the organization, Step 6 – Formulate strategies to manage the issues, Step 7 – Review and adopt the strategies or strategic plan, Step 8 – Establish an effective organizational vision, Step 9 – Develop an effective implementation process, Step 10 – Reassess strategies and the strategic planning process. Because these steps do not necessarily or exclusively follow linearly, it is more correct to speak of "a cycle of strategic changes". Within this framework, a plan is used for all public and non-profit organizations and may also be used for the institution as a whole, as well as for its individual components.

Because a depiction of the analysis of social/environmental factors in the number and type of EMS treatments

is the main purpose of this article, we shall focus exclusively on the fourth step of this cycle. The greatest value of this step lies in obtaining information that is of central meaning for the survival and growth of the organization. This step provides insight into the organization as a whole in relation to its internal/external environment, which should prevent its vulnerability in relation to any potential subsequent negative effects that may emerge from its surroundings. Fundamentally, this step is about obtaining information on the strengths and weaknesses of organizations, which may easily be related to the opportunities and challenges faced by an organization (Bryson, 2004, pg. 124). Identifying opportunities and challenges enables the shaping of a vision and perceptions of the organization in future.

According to Bryson, the influence of the external environment may be divided into three different categories: (i) influence on forces and trends, (ii) key resource controllers and (iii) influence of competitive and collaborative forces (Bryson, 2004, pg. 32). Among all environmental factors that influence on the strategic planning of the development of EMS, those identified as key factors include demographic trends as well as some socio-economic and geographical characteristics of the external environment (Rodriguez-Garcia, 2001; Matter-Walstra et al, 2006; Guidelines on EMS, 2008; Bufon, 2014, pg. 266; Verdel, 2015, pgs. 21 - 22).

2.2 Organization of Emergency Medical Services in the Gorenjska Region

At the primary level of healthcare service provision, EMS is organized in such a way as to ensure its continuous operation during a time of emergency services, as well as during regular clinical activities or as a special unit in accordance with the criteria and grid set forth in the EMS Guidelines (Official Gazette RS, no. 106/2008). In shaping the network of units of prehospital EMS, a series of professionally justified criteria needs to be taken into consideration so that under normal circumstances accessibility to EMS is enabled for most inhabitants in the shortest possible time or within acceptable time limits. In so doing, the following criteria must be taken into account: the number of inhabitants; the proportion of persons aged over 65; geographical conditions and territorial distance; level of threat due to accidents, traffic and similar; development of transportation links; distance to hospitals; response team for carrying out EMS; frequency of events within a particular area (Official Gazette RS, no. 106/2008).

Other factors also impact on the provision of a wider range of EMS services. Tourism, for example, plays a role due to numerous factors that include: an increase in the number of people (tourists) in a given tourist destination, a higher risk for the onset of various injuries that may result from intense performance of sports and other activities during holiday seasons, the possibility of more rapid transmission of infectious disease (Rodriguez-Garcia, 2001; Matter-Walstra et al, 2006). A number of enterprises may be connected with a higher degree of risk in terms of the probability of the onset of work injury, depending on the type of activity performed. This also applies to agriculture. The literature defines acceptable access time as achieving 90 percent access time within 9 minutes or intervention with the highest degree of urgency within 8 minutes in 75 percent of the time (Wu and Hwang, 2009; O'Keeffe et al., 2011). The Regulation on EMS in Slovenia, a new proposal which was submitted for public discussion in April of this year (the debate was closed one month later) has defined as a still acceptable access time for calls with the highest level or urgency as being 10 minutes in urban areas and 20 minutes in rural areas, where the access time must be reached 80 percent of the time in all emergency interventions.

In accordance with the still valid Regulation on EMS, which regulates the conditions, organization and methods of EMS in the Republic of Slovenia, EMS is comprised of doctors and other health workers who are trained in carrying out EMS. At the pre-hospital stage, teams are divided into units A and A2, unit B, unit B-ok, unit C and PHE (prehospital unit). The composition of EMS teams is actually not the only factor for which teams of these services vary, but the scope of their work is also different so that the consequence is variability in the population´s access of the population to EMS across different regions of Slovenia.
Our research study was carried out for the Gorenjska region. In Gorenjska region, which is one of Slovenia's 12 regions, the General Medical Practice Services of Gorenjska (hereinafter OZG) is responsible for providing EMS for the entire region. This is an institution that carries out health care at the primary level and implements it via the following organizational units (hereinafter OE): OE Health Care Centre (hereinafter ZD) Kranj, OE ZD Škofja Loka, OE ZD Tržič, OE ZD Radovljica, OE ZD Jesenice, OE ZD Bled and OE ZD Bohinj.

Table 1 provides data that was obtained in the scope of this research pertaining to socio-geographic and other indicators for units within the Gorenjska region.

As evident from the table, growth trends are evident in the Gorenjska region in terms of: the number of inhabitants, population density and the proportion of individuals over the age of 65. The number of overnight tourist stays and the number of companies located in the region is also on the rise. A downward trend is apparent in the number of traffic accidents. In terms of agriculture, there is an evident reduction in the surface area of usable agricultural land.

Table 1: Data displayed on socio-geographic and other indicators for Gorenjska region (Source: Statistical Office of the Republic of Slovenia, own review). Demographic information is inclusive of 31 December of the current year for the years 2004 to 2008 and 1 July of the current year for the years 2009 to 2012. The number of enterprises includes company activities listed in group C – K from years 2004 to 2007, while after 2008, all enterprises – registered legal or natural persons that displayed revenue during the years of observation or employed person or persons who work and carry out as their main activity one of the activities listed under the Standard Classification System.

Region	Area of Region (km^2)		2004	2005	2006	2007	2008	2009	2010	2011	2012
Gorenjska	2137	Number of inhabitants	198342	199085	199902	201254	201779	202470	203192	203703	204170
		Population density (per km^2)	93.0	93.2	93.5	94.2	94.4	94.7	95.1	95.3	95.5
		Proportion of population aged over 65	15.2	15.5	15.9	16.2	16.4	16.6	16.6	16.7	17.1
		Number of road traffic accidents	2713	2110	2096	2124	1700	1579	1820	1831	1658
		Utilised agricultural area (ha)	33402	33402	33573	33726	33726	33726	31411	31411	31411
		Number of tourist overnight stays	1488957	1460276	1394324	1479922	1411964	1520376	1584895	1640825	1670653
		Number of enterprises	8698	8899	9465	10022	14531	15510	16165	16353	15712

3 Methodology and Research Model

The basic aim of this research is to formulate a proposal for the creation of an EMS organizational model. In so doing, the goal of the study is to verify the prevalence of changing trends and to determine the impact of demographic changes on the number and types of EMS activities. Empirical verification is carried out at the regional level for the Gorenjska region.

3.1 Research Model

Two research questions have been formulated in accordance with the aim and goal of this research. These are listed following the explanations below.

It is possible to trace the growth of EMS treatments over the past ten years, the intensification of the complexity of cases and therefore, a subjectively greater burden on EMS teams (Močnik, 2012, pg. 1). For the period from 1996 to 2006, the United States reported on an increase of EMS visits by 32 percent, while the number of EMS visits in Spain grew by 23.2 percent between 2001 and 2007 (Cabrera et al., 2011). Prehospital unit Ljubljana has also reported on the increase in the number of EMS treatments in the Ljubljana region. In 2010, 35617 outpatient examinations were performed in this unit along with 3235 emergency interventions and 1731 home visits. In 2013, 36198 outpatient examinations were conducted, along with 2915 emergency interventions and 2700 home visits (Verdel, 2015, number pg. 12).

The purpose of forecasting trends is to be able to identify changing trends in the environment on the basis of quantitative and qualitative research methods in a timely manner so as to form a basis for making further decisions (Müller and Müller-Stewens, 2009). The extrapolation of these trends is one of the basic methods of an organization´s strategic planning activities (Capon, 2008, p. 31; Lünger and Luhan, 2010, p. 69). This article displays an analysis and forecasting trends in the number and type of EMS treatments for the next five-year period. The five-year period has been covered because the timeframe for strategic planning requires the most common planning horizon. It was the intent of this research to verify changing trends in the number and types of cases in EMS activities for the region of Gorenjska, so that the following research question has been formulated:

"What is the trend in the number and types of EMS activities in the Gorenjska region?"

Slovenia ranks among those European countries that will be most affected by the consequences of population ageing (Ministry of Health, 2013). A number of countries have reported on a growth trend of healthcare treatments that are the result of population ageing (Salvi et al., 2007; Caley and Sidhu, 2010; Horibata and Takemura, 2015). Because older inhabitants more often become ill due to various chronic diseases, they are more frequent users of healthcare services (Verdel, 2015, pp. 21 - 22). In their study, Šelb-Šemerl and colleagues (2004) have also confirmed that with growth in the proportion of older inhabitants, the burden on the health system will also rise.

It has become apparent that demographic changes are among the most important factors that should be considered in this research study. It was the intention of the researchers to review changing trends in this field and at the same time, to determine the relationship between the proportion of older inhabitants in the region covered by individual EMS units and the number of individual cases covered by EMS. This suggests that the proportion of home visits implemented in areas with a higher proportion of elderly populations is higher due to elderly individuals being more frequently physically impaired. On the basis of this premise, a second research question has been formulated:

"As the most significant demographic factor, how does population ageing impact on the number and types of services carried out by EMS?"

3.2 Methodology

The analysis was carried out for the observed region, that is, the Gorenjska region.

Demographic data and information about other socio-geographical indicators was primarily drawn from publications and documents available on the internet pages of the Statistical Office of the Republic of Slovenia. Demographic data is inclusive of data covered on 31 December for each individual year for the period from 2004 to 2008 and on 1 July for each individual year in period from 2009 to 2012.

Data on the proportion of those aged over 65 was also accessible. Because some ZD cover a region with a greater number of municipalities, such as for example ZD Kranj, ZD Škofja Loka, ZD Bled and ZD Jesenice, this analysis was selected for the average value of the proportion of elderly populations in these municipalities, in recognition of the restriction that municipalities are not comparable to each other in size. The analysis covered only complete data, therefore data from the years 2004 to 2012.

In collecting information on the number of EMS treatments, we focused on the following factors: (i) outpatient examinations, (ii) home visits and (iii) emergency interventions on the field. Data was included for the past time period, specifically from the years 2002 to 2014. For the Gorenjska region, this information was in large part forwarded by service providers. The Ministry of Health forwarded information on the number of emergency interventions conducted in Slovenia, but only for the period from 2008 to 2013. Missing data was forwarded by the National Institute for Public Health.

In searching for the answer to the second research

question, the independent variable in the analysis was represented by the share of the population over the age of 65. Dependent variables included the number of outpatient examinations, the number of home visits and the number of emergency interventions.

Information was arranged in Microsoft Office Excel. Because this represents an analysis of panel information that is a combination of temporal and cross-sectional species, STATA 13.0 software was used. A representation of data in graphic form was first conducted, as enabled by STATA. An analysis in the form of a decision algorithm subsequently followed. On the basis of the Hausman test, it was determined which form of the panel regression analysis was more adequate for clarification of this case, with selection being made between the fixed effects and the random effects models.

For the purpose of forecasting a five-year period, statistical package RStudio and Hyndman´s Forecast package were used. This enables part automated forecasting that ranks individually required parameters for prediction on the basis of a time series analysis (Hyndman, 2015). Forecast contains algorithms that are used to forecast univariate time series, including exponential smoothing with the assistance of spatial models and automated ARIMA modelling. If the described mechanism did not provide adequate results, a linear extrapolation model was used, where the trend represented an independent variable in the model. Theoretical bases for the execution of statistical analyses were taken from two sources, namely from a book authored by Kohler and Kreuter and another authored by Hyndman (Kohler and Kreuter, 2009; Hyndman, 2015).

4 Research Results

Due to space limitations and the restrictions of black and white print, complete analyses are with rare exception not displayed in graphical form, but are instead displayed in tables, in greater detail. This is shown only in individual (major) stages of statistical analysis, as due to space restrictions, it is not possible to display the results for all.

Data on the number of EMS treatments for individual OZG organizational units are more clearly presented in Table 2. Due to space constraints, data for ZD Bohinj and ZD Radovljica are not listed in the table nor is data for the entire analysed time period. In the analysis of trends as regards the number and types of cases, data for these two units (ZD Bohinj and ZD Radovljica) have been graphically depicted together, alongside data for all other units. This is depicted in Figure 1. From Table 2, it is possible to determine that the number of cases is predominantly rising in terms of emergency interventions, home visits and outpatient examinations. This does not apply to only a few rare cases.

It must also be clarified that EMS providers carry out secondary treatments at clinics (for example, peer reviews and coroner services), but these treatments represent a small proportion of all treatments. In addition, due to their being defined by various other legal foundations and also because they are not financially covered by the Health Insurance Institute of Slovenia (hereinafter, ZZZS), they have not been included in this analysis.

4.1 Predicting Trend Shifts for EMS Treatments in Gorenjska Region for the Next 5 Years

On the basis of time-series data on the number of EMS treatments, a forecast for the Gorenjska region for a particular type of treatment for the next five-year time period was carried out. The forecast trend has been graphically displayed using a linear chart, as shown in Figure 1.

4.2 Impact of Proportion of Older Inhabitants on the Number and Type of EMS Activities

Particularly unfavourable demographic statistics are apparent in the municipalities of Kranjska Gora (which is under the competence of OE ZD Jesenice), Bohinj and Bled, given that these are areas with the highest ageing index in the region (the ageing index reveals the number of inhabitants aged 65 and over, per 100 inhabitants aged under 15). The trend displaying the proportion of populations aged over 65 is shown in Figure 2.

The analysis was first used to verify what proportion of EMS treatments are represented by individual EMS treatments, where the time period is between 2008 and 2013. The results of the analysis are displayed in Table 3.

The analysis has confirmed that the proportion of home visits in regions with a higher proportion of those aged over 65 is greater.Analysis on the basis of a determining test algorithm indicates that a fixed effects model provides sufficient interpretation for the purpose of clarifying the correlation with an independent variable (being the proportion of population aged over 65) using a regression analysis to check the second research question. The Hausman test, which was used to verify whether the remainder was correlated with an independent variable in the model has indicated that the value is $p<0.05$ in all cases. The fixed effects model controls temporally invariable differences among areas.

This method is designed to measure time invariable causes of the dependent variable (being the number of emergency interventions, the number of home visits and the number of outpatient examinations), which may in this case be used to monitor the causes of observed changes within an individually observed area. This method assumes that some characteristics of an individual unit affects the dependent variable (that is the number of home visits in

*Table 2: Display of data on the number of emergency interventions on the field, home visits and outpatient examinations per healthcare centre in OZG (own review; *- no information).*

Region	Area of Region (km^2)		2004	2005	2006	2007	2008	2009	2010	2011	2012
Gorenjska	2137	Number of inhabitants	198342	199085	199902	201254	201779	202470	203192	203703	204170
		Population density (per km^2)	93.0	93.2	93.5	94.2	94.4	94.7	95.1	95.3	95.5
		Proportion of population aged over 65	15.2	15.5	15.9	16.2	16.4	16.6	16.6	16.7	17.1
		Number of road traffic accidents	2713	2110	2096	2124	1700	1579	1820	1831	1658
		Utilised agricultural area (ha)	33402	33402	33573	33726	33726	33726	31411	31411	31411
		Number of tourist overnight stays	1488957	1460276	1394324	1479922	1411964	1520376	1584895	1640825	1670653
		Number of enterprises	8698	8899	9465	10022	14531	15510	16165	16353	15712

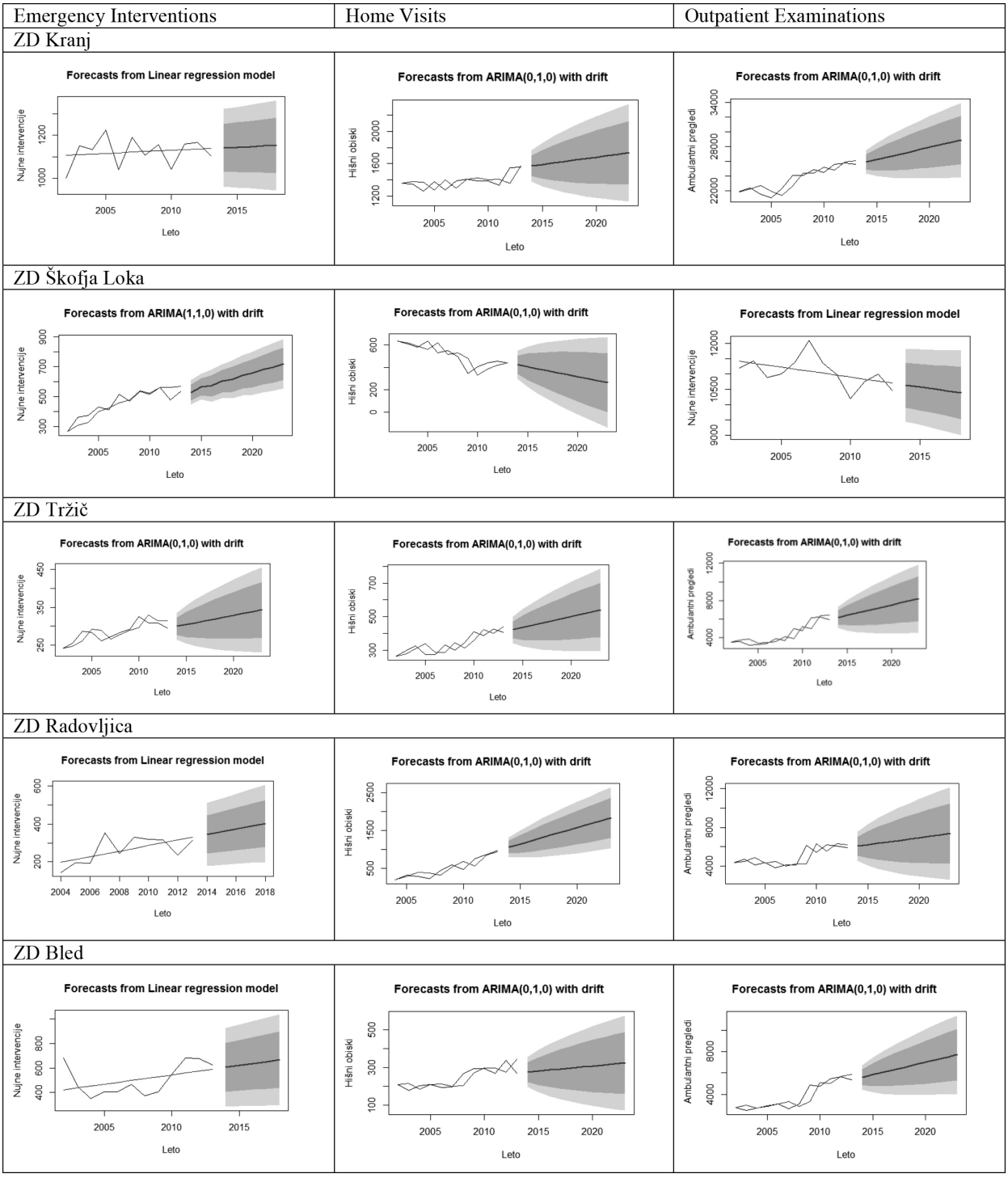


Figure 1: A graphical display of a forecast trend for a number of EMS treatments in the Gorenjska region.

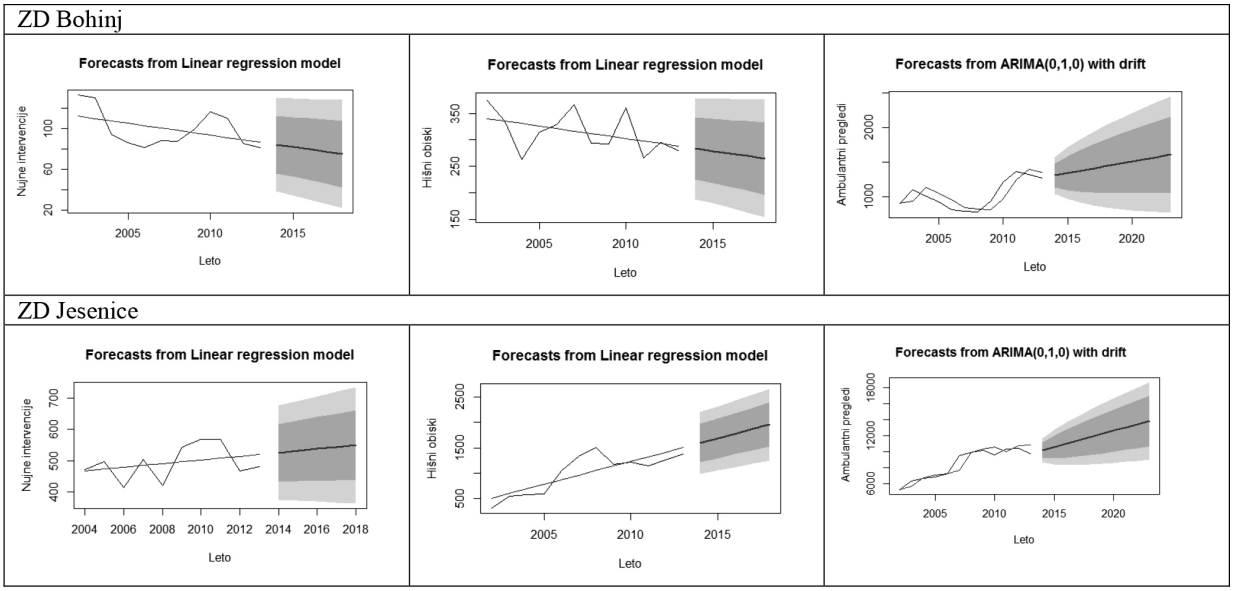


Figure 1: A graphical display of a forecast trend for a number of EMS treatments in the Gorenjska region. (continued)

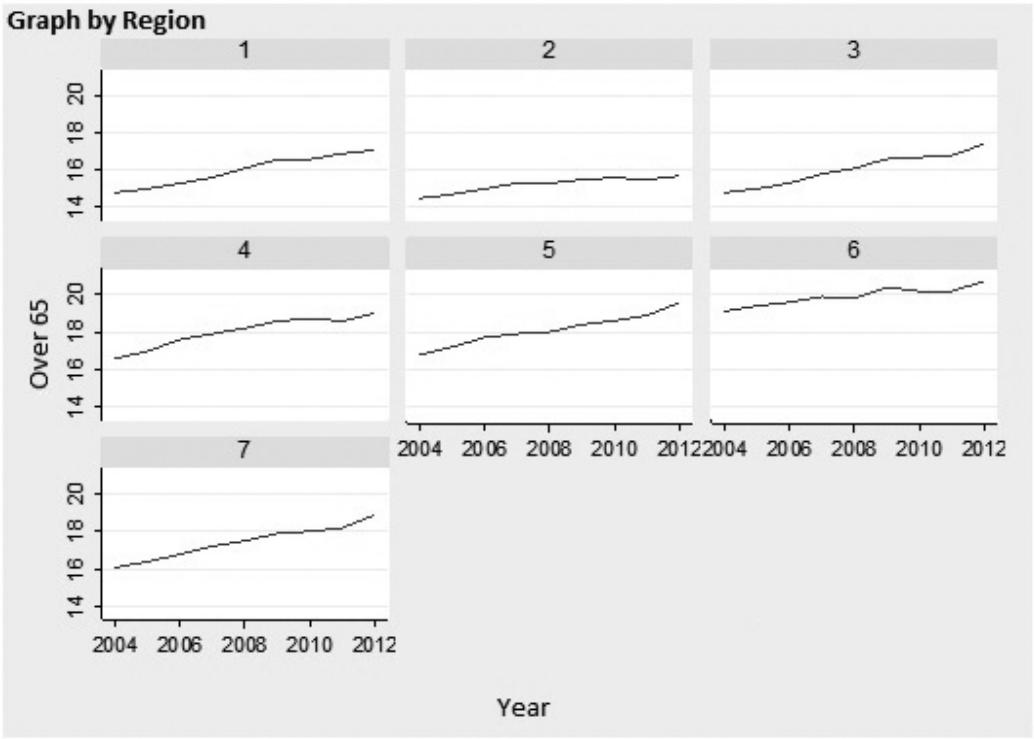


Figure 2: Graphical representations of rising proportions of elderly populations in the Gorenjska region (significance of numbers in the title graphic: 1 - ZD Kranj, 2 - ZD Škofja Loka, 3 - ZD Tržič, 4 - ZD Radovljica, 5 - ZD Bled, 6 - ZD Bohinj, 7 - ZD Jesenice)

Table 3: Display of proportion of individual EMS treatments performed by OE in Gorenjska, 2008 to 2013 inclusive (hi-quadrant=9547.928; p<0.001)

Organizational Unit	No. of Emergency Interventions (%)	No. of Home Visits (%)	No. of Outpatient Examinations (%)
ZD Kranj	6736 (4.1)	8623 (5.2)	150169 (90.7)
ZD Škofja Loka	3086 (4.4)	2589 (3.7)	64779 (91.9)
ZD Tržič	1814 (5.1)	2274 (6.3)	31728 (88.6)
ZD Radovljica	1757 (4.4)	4693 (11.6)	33858 (84.0)
ZD Bled	3309 (9.7)	1729 (5.1)	29143 (85.3)
ZD Bohinj	578 (6.2)	1786 (19.3)	6891 (74.5)
ZD Jesenice	3049 (4.3)	7674 (10.8)	60218 (84.9)

EMS provision) – the variable that we wish to control. The share of explained variance (coefficient of determination) measures over 90 percent in EMS provision in all cases.

The statistically significant t test indicated that the proportion of the population aged 65 and over impacts upon the number of home visits. Even binary variables for regions have a statistically significant impact on the clarification of dependent variables, while the F statistic indicates that the model fits the data well (F (9.71) =179.93; p=0.000). The proportion of explained variance of the dependent variable which may be attributed to the variation of the independent variable is, at 95.8 percent, very high.

5 Discussion

Organizations today work in an extremely dynamic and rapidly changing environment. It is for this reason that they must constantly be aware of and focused on changes in their external environment, all the while monitoring their own internal capacities (Jeffs, 2008, pg. 16). As a result, the external environment and time may reliably be defined as two key factors in the successful operations of all organizations, irrespective of their field of activity (Morden, 2007, pg. 109; Jeffs, 2008, pg. 17).

This research confirms what researchers from other parts of the world have already reported – namely, that the number of EMS treatments is on the rise, as is the complexity of administered treatments (Fischer et al., 2000; Cabrera et al., 2011; Močnik, 2012, pg. 1; Verdel, 2015, pg. 12). The number of EMS treatments is also growing in the Gorenjska region and this trend is expected to continue in the following 5-year period. This fact applies not only to rare exceptions among observed organizational units in Gorenjska, but is common in municipalities throughout the region.

Highly unfavourable demographic statistics are prevalent in the municipalities of Kranjska Gora, Bohinj and Bled, as these areas exhibit the highest ageing index in the region (the ageing index indicates the number of people aged 65 and over, per 100 inhabitants under the age of 15). This study has confirmed that the number of home visits is higher in those municipalities. The case of OE ZD Bled has indicated that a larger proportion of treatments is represented by outpatient examinations, although it is possible to attribute this to the fact that Bled is an extremely well developed tourist destination and the number of outpatient examinations strongly correlates with the development of its tourism activities. In their research, Matter-Walstra and colleagues (2006) have proven a higher number of medical cases during the winter season, a factor that was correlated with a higher number of tourist visits at this time.

This study has several limitations. Firstly, the study covered a relatively short period of time. Secondly, it has become apparent that the data acquired from different research participants was obtained in a somewhat varied manner, which could result in there being some deviation from the benchmark in future research. It has been determined that complete insight into the number of EMS treatments conducted were not held by some of the providers themselves. This reinforces our conclusion that most healthcare organizations in the region unfortunately have little awareness of their efficiency and effectiveness, a fact that has also been reported by foreign researchers. Bryson, for example, notes that a vast majority of public and non-profit organizations are familiar with an entire host of information with respect to financial flows, but few have information on a clear philosophy, core values, research competencies and organizational culture (Bryson, 2004, pg. 40).

6 Conclusion

One of the key elements of the modern healthcare system is an efficient and carefully constructed system of prehospital EMS that takes into account social changes. The challenge of modern times is how to maintain the standard and accessibility of healthcare services at their existing level. Many calls for the reorganization of the health care sys-

tem have been made among the public in recent years. For example, in Slovenia, there has even recently been an extremely controversial establishment of a network of emergency centres aimed at merging EMS prehospitals and hospital emergency divisions. One of the goals in establishing a network of emergency centres that will at some point be reliably positioned in all regions of the country is to improve the quality and efficiency of emergency healthcare conditions.

The undertaken analysis is part of more extensive research that aims to develop a proposal for the formation of an EMS organizational model that will enable the efficient use of human and other resources and which will also realize the provision of efficient and effective medical care, from the perspective of the medical field, health care providers and patients. Some important elements that are critical to consider in the formation of EMS at the prehospital level have been identified. This has shown to anticipate the trend in the number and types of EMS treatments in the Gorenjska region.

In accordance with the findings of this research, the following recommendations for the process of reorganizing EMS activities in the Gorenjska region are proposed. First, due to the continued provision of 24 hour health care service, the merger of some geographically proximate health care providers is recommended. It would be rational to combine units in terms of total coverage of outpatient examinations and in carrying out home visits, taking also into consideration the establishment of emergency centres. Due to assuring good response from EMS teams, it is at present necessary to retain the current allocation of units carrying out paramedic emergency services, although staff profiles may be adjusted in some areas and for some types of services. Prior to any type of reorganization, we must assure the introduction of a dispatch system and triage system, which has not yet been guaranteed for the Gorenjska region.

National policy and Health Ministries face the difficult and important task of determining a formula according to which it will be possible to preserve current access to healthcare services. The public and local communities have a responsibility to understand the reasons for changes in healthcare and to prepare to cooperate in the process of implementing necessary emergency reforms. Finally, managers of healthcare organizations face several challenges, one of which is the reliable development and implementation of a system of monitoring quality, as well as a more efficient response to all changes in the external environment. Strategic planning, the basis of which is to study an organization's surrounding environment, must become a central component in the management of healthcare organizations. This is especially true because organizations do not impact on their external environment.

Acknowledgements

The authors are extremely grateful to Ms. Jana Suklan for her assistance in the statistical analysis. We are also very grateful to Ms. Mojca Kodric for her assistance in the Slovenian-English translation.

Literature

Berwick, D.M., Nolan, TW., & Whittington, J. (2008). The triple aim: Care, health, and cost. *Health Affairs,* 27(3), 759-769, http://dx.doi.org/10.1377/hlthaff.27.3.759

Bleicher, K. (2011). *Das Konzept Integriertes Management.* Frankfurt am Main: Campus Verlag.

Bryson, B. (2004). *Strategic Planning for Public and Nonprofit Organizations.* San Francisco: Jossey-Bass.

Bufon, M. (2014). *Družbena geografija sveta: Globalni sistemi in regionalne dinamike [Social geography of the world: The global systems and regional dynamics].* Koper: Univerzitetna založba Annales. Retrieved June, 23, 2015 from http://www.zrs.upr.si

Cabrera, E., Taboada, M., Iglesias, M.L., Epelde, F., & Luque, E. (2011). Optimization of healthcare emergency departments by agent-based simulation. *Procedia Computer Science,* Vol. 4, 1880-1889, http://dx.doi.org/10.1016/j.procs.2011.04.204

Caley, M., & Sidhu, K. (2010). Estimating the future healthcare costs of an aging population in the UK: expansion of morbidity and the need for preventative care. *Journal of Public Health*, 33(1), 117-122, http://dx.doi.org/10.1093/pubmed/fdq044

Capon, C. (2008). *Understanding Strategic Management.* Harlow: Prentice Hall.

Daft, LR. (2010). *New Era of Management.* South-Western, Cengage Learning.

Fischer, A.J., O´Halloran, P., Littlejohns, P., Kennedy, A., & Butson, G. (2000). Ambulance Economics. *Journal of Public Health Medicine,* 22(3), 413-421, http://dx.doi.org/10.1093/pubmed/22.3.413

Hedegaard, J., & Ahl, H. (2013). The gender subtext of new public management-based work practices in Swedish health care. *Equality, Diversity and Inclusion: An International Journal,* 32(2), 144-156, http://dx.doi.org/10.1108/02610151311324389

Hitt, M.A., Black, J.S., & Porter, LW. (2009). *Management.* Upper Saddle River, NJ: Prentice-Hall.

Horibata, K., & Takemura, Y. (2015). Inappropriate use of ambulance services by elderly patients with less urgent medical needs. *The Tohoku Journal of Experimental Medicine*, 235(2), 89-95, http://doi.org/10.1620/tjem.235.89

Hyndman, RJ. (2015). *Forecasting functions for time series and linear models.* Retrieved October 1, 2015 from http://cran.r-project.org/web/packages/forecast/forecast.pdf

Jeffs, C. (2008). Strategic management. London: SAGE Pub-

lications, http://dx.doi.org/10.4135/9781446216446
Kohler, U., & Kreuter, F. (2009). *Data Analysis Using Stata.* Stata Press, Texas.
Kowalczyk, R. (2002). The effect of new public management on intensive care unit staff. *The International Journal of Public Sector Management,* 15(2), 118-128, http://dx.doi.org/10.1108/09513550210419573
Kuhlmann, E., & von Knorring, M. (2014). Management and medicine: Why we need a new approach to the relationship. *Journal of Health Services Resesarch and Policy,* 19(3), 189-191, http://dx.doi.org/10.1177/1355819614524946
Lünger, B., & Luhan, M. (2010). *Strategische Krankenhausmanagement in der Praxis.* V: Debatim, J.F., Ekkernkamp, A., & Schulte, B. (Hrsg.) (2010). Krankenhausmanagement. Berlin: Medizinisch Wissenschaftliche Verlagsgesellschaft.
Matter-Walstra, K., Widmer, M., & Busato, A. (2006). Seasonal variation in orthopedic health services utilization in Switzerland: The impact of winter sport tourism. *BMC Health Services Research*, 6: 25, http://dx.doi.org/10.1186/1472-6963-6-25
Ministry of Health. (2013). *Javna mreža primarne zdravstvene dejavnosti v republiki Sloveniji [The public network of primary healthcare activities in the Republic of Slovenia].* Retrieved June 2, 2015 from www.mz.gov.si
Morden, T. (2007). *Principles of Strategic Management.* Ashgate Publishing Limited, Hampshire.
Močnik, U. (2012). *Analiza čakalnih vrst v dežurni ambulanti zdravstvenega doma [Analysis of emergency department waiting lines in Community Health Centre].* Master's Thesis, Ljubljana: Faculty of Economics.
Müller, A.W., & Müller-Stewens, G. (2009). *Strategic Foresight.* Stuttgart: Schäffer-Poeschel Verlag.
Pravilnik o službi nujne medicinske pomoči [Rules on emergency medical services].Pravilnik o službi nujne medicinske pomoči (Uradni list RS, št. 106/08 z dne 11. 11. 2008), Official Gazette RS, no. 106/2008.
Ramani, K.V., Mavalankar, D., & Govil, D. (2008). *Strategic Issues and Challenges in Health Management.* New Delhi: SAGE Publications.
Robbins, SP., & Coulter, M. (2009). *Management.* Upper Saddle River, NJ: Prentice-Hall.
Rodriguez-Garcia, R. (2001). The health-development link: Travel as a public health issue. *Journal of Community Health*, 26(2), 93-112, http://dx.doi.org/10.1023/A:1005225129295
Rodríguez Perera, FP. & Peiró, M. (2012). Strategic Planning in Healthcare Organizations. *Rev Esp Cardiol,* 65(8), 749-754, http://dx.doi.org/10.1016/j.rec.2012.04.004
Salvi, F., Morichi, V., Grilli, A., Giorgi, R., De Tommaso, G., & Dessi-Fulgheri, P. (2007). The Elderly in the Emergency Department: A Critical Review of Problems and Solutions. *Internal and Emergency Medicine*, 2(4), 292-301, http://dx.doi.org/10.1007/s11739-007-0081-3
Šelb-Šemerl, J., Rok-Simon, M., Kelšin, N., & Ivas, N. (2004). Staranje prebivalstva v Sloveniji: demografske spremembe in nekaj posledic za zdravstveno varstvo. Posvet slovenskega zdravniškega društva o problematiki starostnikov in staranja [The Ageing of the Population in Slovenia: Demographic changes and some consequences for Healthcare. Consult of the Slovenian Medical Association on the problems of older people and aging]. Retrieved June 3, 2015 from www.szd.si
Varkey, P., & Bennet, KE. (2010). Practical Techniques for Strategic Planning in Health Care Organizations. *Physician Executive Journal,* 36(2), 46-48.
Verdel, D. (2015). *Obravnava nenujnega pacienta v ambulanti nujne medicinske pomoči [Treatment of non-urgent patient in the emergency department].* Master's Thesis, Maribor: Faculty of Health Sciences.
Walshe, K., & Smith, J. (2011). *Healthcare Management.* Berkshire: Open University Press.
Wo, C.H., & Hwang, P.K. Using a discrete-event simulation to balance ambulance availability and demand in static deployment systems. *Academic Emergency Medicine*, 16(12), 1359-1366, http://dx.doi.org/10.1111/j1553-2712.2009.00583.x

Tatjana Kitić Jaklič attained her specialization in Family Medicine at the University of Ljubljana. She practices as a family medicine doctor at the Kranj Community Health Centre, Division for General Medical Practice Activities of the Gorenjska Region. Her current research interests encompass organizational methods and techniques for achieving greater efficiency and effectiveness in the field of healthcare.

Jure Kovač is a Professor of Organization and Management at Faculty of Organizational Sciences, University of Maribor. His research interests are organization theory, organization design and management development.

Vpliv demografskih sprememb na organiziranost nujne medicinske pomoči – primer Slovenije

Uvod in namen: Sodobno okolje zahteva od organizacij (tako profitnih kot neprofitnih) nenehno usklajevanje modela organiziranosti s spremembami v okolju ter lastnim videnjem in strategijo nadaljnjega razvoja. Organiziranost nujne medicinske pomoči (NMP) je v tem trenutku v Sloveniji izredno aktualna tema, saj na nacionalni ravni teče projekt, katerega namen je vzpostavitev nove organiziranosti te službe. V članku bomo prikazali analizo vpliva dejavnikov okolja na področju števila in vrste obravnav v službi NMP ter prikazali napoved trendov za to dejavnost, in sicer na primeru ene od regij v Sloveniji. To predstavlja začetno fazo procesa strateškega načrtovanja omenjene dejavnosti in s tem izhodišče za oblikovanje organizacijskega modela te službe.
Metode: V članku je prikazana analiza dejavnikov okolja, ki vplivajo na oblikovanje organizacijskega modela NMP, kar bo opravljeno na primeru ene geografske regije v Sloveniji. Uporabljeni podatki obsegajo časovno obdobje od leta 2002 do 2014. Pri analizi je bilo uporabljeno programsko orodje STATA 13.0. Za namen napovedovanja trenda petletnega obdobja smo uporabili statistični paket RStudio in knjižnico Forecast avtorja Hyndmana, ker knjižnica vsebuje algoritme za napoved univariatnih časovnih vrst vključno z eksponentnim glajenjem s pomočjo prostorskih modelov in avtomatizirano ARIMA modeliranje.
Rezultati: Z raziskavo smo potrdili zvezo med dejavniki okolja in stopnjo naraščanja potreb po storitvah službe NMP. Kot ključni dejavnik okolja, ki povečuje potrebo po storitvah NMP, je bila potrjena starostna struktura prebivalstva. Na tej osnovi smo oblikovali model predvidevanja rasti po obsegu dejavnosti NMP.
Zaključek: V raziskavi so bili ugotovljeni nekateri pomembni elementi, ki jih je neobhodno potrebno upoštevati pri formiranju mreže službe NMP na predbolnišnični ravni. Staranje prebivalstva se je izkazalo kot ključni dejavnik okolja. Skladno z napovedjo trendov je tudi za prihodnost mogoče pričakovati povečanje obremenitev na področju dejavnosti NMP.

Ključne besede: *strateško načrtovanje, predvidevanje, trendi, nujna medicinska pomoč, organizacijski model*

DOI: 10.1515/orga-2015-0022

Social CRM Adoption and its Impact on Performance Outcomes: a Literature Review

Marjeta Marolt[1], Andreja Pucihar[1], Hans-Dieter Zimmermann[2]

[1]University of Maribor, Faculty of Organizational Sciences, Kidričeva cesta 55a, 4000 Kranj, Slovenia
marjeta.marolt@fov.uni-mb.si, andreja.pucihar@fov.uni-mb.si

[2]University of Applied Sciences, FHS St. Gallen, Rosenbergstrasse 59, Postfach, 9001 St.Gallen, Switzerland
hansdieter.zimmermann@fhsg.ch

Background and Purpose: Social customer relationship management (social CRM) is an emerging concept that integrates traditional CRM and social media in order to provide benefits for organizations and customers. Despite the benefits that social CRM can bring, many organizations are still at the early stage of adoption. To move beyond social marketing and to exploit opportunities offered by sales and customer service, organizations need to be aware of factors that drive social CRM adoption and different implications of social CRM adoption for performance outcomes. This paper aims to provide a review of scholarly literature on social CRM adoption with the focus on factors and performance outcomes.
Design/Methodology/Approach: To provide a comprehensive view of social CRM adoption and its impact on performance outcomes, the publications of interest include scholarly journal papers from information systems and marketing disciplines and conference proceedings. Selected publications were reviewed, and findings classified into three categories: the extent of social CRM adoption, the factors influencing CRM adoption, and the impact of social CRM on performance outcomes.
Results: It appears that several issues regarding social CRM adoption and its implications for performance outcomes as well as the actual use of social media in the context of CRM need additional empirical support.
Conclusion: Our observations have confirmed that many researchers proposed social CRM models based on existing theories and concepts of traditional CRM. Nevertheless, some specifics of social media implications on CRM have been overlooked. The researchers therefore suggest further adjustment/extension of their models.

Keywords: *social CRM; extent of adoption; factors; performance outcomes*

1 Introduction

As already observed in the review on customer relationship management (CRM) technology in multichannel environment, written by Awasthi and Sangle (2012), in recent years new channels have emerged and one of the integral needs of CRM is the extension of services to multiple channels. The channels that are currently playing an important role in CRM are social media: customers and potential customers are conversing openly about brands, services or products through it, and the utilization of customer-preferred channels is becoming a must in order to acquire and retain such customers.

According to Lehmkuhl and Jung (2013), there is no generally accepted definition of social CRM; therefore, people have a different understanding of what it is. The most accepted definition of social CRM was defined by Greenberg (2009, p. 34) as "a philosophy and a business strategy, supported by a technology platform, business rules, processes and social characteristics, designed to engage the customer in a collaborative conversation in order to provide mutually beneficial value in a trusted and transparent business environment". According to this definition,

Received: September 9, 2015; revised: October 8, 2015; accepted: October 21, 2015

social CRM is a new approach that integrates traditional customer-facing activities with emergent social media applications to engage customers in collaborative conversations to provide mutually beneficial value (Trainor, 2012). Organizations are now using traditional CRM and associated information systems to manage traditional customer transaction data as well as social media that enable them collaboration and knowledge sharing with prospects and customers.

However, according to Faase, Helms, and Spruit (2011) there are sparse directions on how to integrate social media in CRM. Based on the scholarly and practitioner literature review, it appears that social CRM is not a replacement, but rather an extension of traditional CRM (Askool and Nakata, 2011; Yawised, Marshall, and Stockdale, 2013). By linking social media with existing CRM processes, organizations may potentially improve their performance (Acker, Gröne, Akkad, Pötscher and Yazbek, 2011; Choudhury and Harrigan, 2014; Harrigan, 2011; Leary, 2008; Trainor, Andzulis, Rapp, and Agnihotri, 2014).

Researchers recognize the main benefits of social CRM in building trust, gaining customer insights, establishing customer loyalty, achieving customer retention, involving customers in new product or service development, improving customer lifetime value and company reputation, and lowering the cost of service, to name a few (Acker et al., 2011; Küpper, Lehmkuhl, Wittkuhn, Wieneke and Jung, 2015; Sarner et al., 2011; Sigala, 2011; Trainor et al., 2014; Verhoef, Reinartz, and Krafft, 2010; Woodcock, Green and Starkey, 2011; Yawised et al., 2013).

Besides the plethora of benefits, there are also some challenges that social CRM brings. First, the organization needs to identify their business needs and upon that find the most appropriate technology to support them (Kietzmann, Hermkens, McCarthy & Silvestre, 2011). The organization also needs to set a proper social CRM strategy as well as to move beyond social marketing and exploit opportunities offered by sales, customer service and digital commerce (Sussin, 2015).

Furthermore, the organization needs to know how to engage in conversation with customers online; ideally the employees should be educated in public relations and customer service (Sigala, 2011). Another issue is a lack of control, because the conversation is carried out via social media which is not a property of the organization, but the property of the social media provider as well as everyone involved in the conversation (Kietzmann et al., 2011). Last but not least, organizations are confronted with a challenge on how to measure the performance (Woodcock et al., 2011).

According to Kiron, Palmer, Nguyen Phillips and Berkman (2013), some organizations still consider social business to be an application or tool. Other organizations strive to develop more mature social business capabilities by focusing on key business challenges. They attempt to integrate social business into strategy and operations, and to use it in daily decision making. However, progress is slow (Kiron et al., 2013). To move beyond the marketing department, organizations need be aware of all the opportunities that social media brings, especially for the sales and customer service departments, where social media have great potential (Kiron et al., 2013). Furthermore, organizations need to be aware of factors and outcomes that the broader exploitation of social media in the context of CRM brings. This will help them overcome the barriers they are facing and help them better understand customers' needs, provide better tailored product and services, improve continuous interaction with customers, etc.

Even though the growing body of research on social CRM has become apparent, there are still areas that require further research that will contribute to the growing knowledge base. In this paper, we aim to provide insights into the latest research done in the field of social CRM adoption. The purpose of this paper is to identify areas of concern regarding social CRM adoption as well as its influence on performance outcomes. The findings will serve as the foundation for further research. The paper is organized as follows. In the next section, we present existing literature reviews on social CRM and clarify the addressed issues. In the third section, we present a methodology on how the papers were selected. In the fourth section, we discuss the findings of the review while in the last section, the conclusion and further research directions are presented.

2 Previous literature reviews in social CRM

In this section, the existing literature reviews in the field of social CRM are presented. The overview of social CRM literature review publications is presented in Table 1.

The first review on CRM with a key focus on the multiplicity of the channels that mentioned social CRM was published by Awasthi and Sangle in 2012. The purpose of this paper was to provide insights on the adoption of CRM technology, including the CRM in the context of the multichannel environment, based on literature published between 2006 and 2010. The publications were categorized under four main themes based on the main channel of CRM implementation: CRM, multichannel CRM, eCRM, and mCRM. The authors concluded that the focus on CRM with strategic alignment at various levels was the primary concern. They also argue that the empirical support for the technical and nontechnical issues regarding the CRM in multichannel environments needs to be provided.

The first review that was specifically focused on social CRM was presented in a Malaysian Conference on Information Systems in 2013 by Yawised et al. (2013). This review was focused on the comparison between two types of literature (i.e. scholars' and practitioners') and

Table 1: Earlier literature reviews

	Year	Authors	Papers	Span	Central theme
1	2012	Awasthi and Sangle	123	2005-2010	CRM technology in multichannel environment
2	2013	Yawised, Marshall, and Stockdale	not specified	not specified	comparison of scholarly and practitioner literature on social CRM
3	2013	Lehmkuhl and Jung	31	2005-2012	organizational approaches to designing social CRM systems
4	2014	Küpper, Jung, Lehmkuhl, Walther and Wieneke	37	not specified	social CRM performance measures

the identification of future research agendas. The authors concluded that these two types of literature had both general conceptual similarities and differences. The general agreement between them is that social CRM is an extension of traditional CRM and is aimed at "customer engagement". Regarding the differences, the scholarly literature is focused on the specific issues related to the theoretical concept of social CRM, while the practitioner literature pays more attention to how to respond to new challenges and which new opportunities are offered by the emergence of social CRM.

Another literature review was presented at the 26th Bled eConference by Lehmkuhl and Jung (2013). This study presented a review of the most current scholarly literature to provide a comprehensive overview of the current social CRM knowledge base and provide further research directions. The publications were set into four categories with different emphasis on designing social CRM systems or components thereof, including organizational factors, processes, relationship lifecycle, and social CRM framework. While social CRM is a rather new concept, the authors included all publications until August 2012. They concluded that scholarly publications on social CRM are still limited and suggest that future research should empirically explore factors and outcomes of social CRM adoption.

The last review addressing social CRM is published by Küpper, Jung, Lehmkuhl, Walther and Wieneke (2014). The review is focused on performance measures for social CRM. The publications were discussed under four categories of performance measurement systems: infrastructure, process, customer, and organizational performance. The study concluded with suggestions for further research directions toward a preliminary social CRM performance measurement model development.

It can be observed that none of the literature reviews have a key focus on the factors and outcomes of social CRM adoption. Even though some issues have already been addressed by Lehmkuhl and Jung (2013), whose main theme was focused towards organizational approaches to designing social CRM systems, and by Küpper et al. (2014), whose main theme was focused on performance measures for social CRM, they did not provide a holistic view of the factors and outcomes of social CRM adoption. Additionally, due to the appearance of new papers in recent years, there is a paucity of literature reviews on the developments occurring in recent years. To fill these gaps, this paper reviews literature in social CRM with a particular emphasis on the factors and outcomes of social CRM adoption.

3 Research methodology

In this section, the review scope and selection of papers are presented. Since social CRM is an interdisciplinary topic, relevant articles are published across different disciplines. Furthermore, while social CRM is a relatively new phenomenon, most of the contemporary research is published in conference proceedings. Therefore, publications of interest include scholarly journal papers from information systems and marketing disciplines as well as conference proceedings from the abovementioned disciplines. To provide a comprehensive bibliography of the academic literature on social CRM, the following available online journal databases were searched: EBSCOhost, ProQuest, Web of Science and Scopus. To ensure the quality of the conference papers we focused only on a few well established (traditional) conferences in the fields of information systems (International Conference on Information Systems (ICIS), European Conference on Information Systems (ECIS), Americas Conference on Information Systems (AMCIS), Hawaii International Conference on System Science (HICSS) and Bled eConference), and marketing (American Marketing Association (AMA) and European Marketing Academy (EMAC)). Those conferences were chosen because they were also selected in several other literature reviews on CRM (e.g. Awasthi & Sangle, 2012; Küpper, Jung, Lehmkuhl, Walther and Wieneke, 2014b; Paulissen, Milis, Brengman, Fjermestad and Romano, Jr., 2007). Furthermore, Awasthi & Sangle (2012) observed that among the leading conferences that published papers

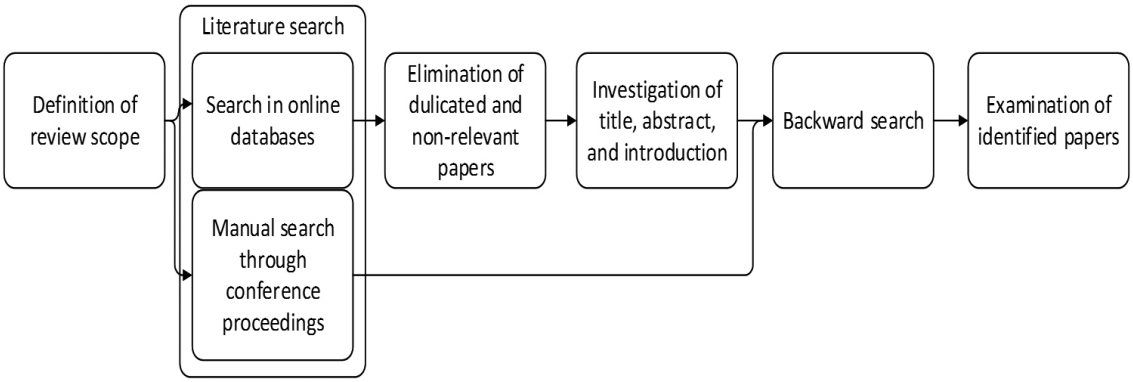


Figure 1: Research approach

Table 2: Results of the qualitatively assessed identified papers

Database	Keyword search			Backward search
	Keywords		Total evaluated publications	Total evaluated publications
	(a)	(b)		
EBSCOhost	**3** (27)	**5** (53)	**8**	-
ProQuest	**6** (257)	**1** (367)	**7**	
Web of Science	**1** (2)	**2** (9)	**3**	
Scopus	**0** (18)	**0** (28)	**0**	
Conferences	-		**4**	
Sum	-		**22**	**9**
Total net hits			**31**	

in more than one category (CRM, eCRM, mCRM and multichannel CRM) are HICSS and Bled eConference. Figure 1 presents the research approach.

In this literature review, we focused on the research outcomes and theories applied in the analyzed papers. The goal was to summarize and identify central issues, in an attempt to provide a neutral perspective that involves exposing many sides to an issue. The findings and conclusions of the review are conceptually arranged, which means that results with similar concepts were grouped together (Cooper, 1988).

The considered time span of published publications was 2010 to 2015 due to the recent popularity of the topic in academia and practice. The initial keyword search for papers was performed in June 2015. Due to the focus on the entire chain of social CRM adoption constituted by adoption factors, the extent of adoption and performance outcomes, we searched for papers containing the following keywords:

- (a) "Social CRM" or "SCRM" or "CRM 2.0" or "social customer relationship management" or ("social media" and "CRM") or ("social media" and "customer relationship management") or ("web 2.0" and "CRM") or ("web 2.0" and "customer relationship management") and "adoption".
- (b) Social CRM" or "SCRM" or "CRM 2.0" or "social customer relationship management" or ("social media" and "CRM") or ("social media" and "customer relationship management") or ("web 2.0" and "CRM") or ("web 2.0" and "customer relationship management") and "performance".

The search results are summarized in Table 2. The number in brackets represents the number of articles found in the respective database using the specific search keyword. Then duplicated entries from the obtained lists were removed and non-relevant papers eliminated from any further investigation. The articles were further evaluated by reading the title, abstract, and introduction. The numbers marked in bold represent the number of articles that were identified relevant to our investigate topic. While some proceedings of the aforementioned conferences are not indexed in the journal databases (for instance, the Bled eConference proceeding for 2014 are still in the process

of being indexed), we also searched through conference proceeding manually. The manual search identified four additional relevant papers. We also reviewed other work of the authors from the obtained list of relevant papers as well as citations of the papers (Levy & Ellis, 2006). This so-called backward search yields nine additional relevant papers. The remaining 31 articles were further examined to determine the main findings and identify further research directions.

4 Findings from literature review

In this study CRM is defined as an integrated approach that seeks to understand the customer, and the focus is on customer relationship development and customer retention (Chen & Popovich, 2003). CRM is a complex strategy rather than merely an integration of new information technology (Piskar & Faganel, 2009).

Drawing on the observation from Damanpour and Schneider (2008) that innovation is not truly adopted until "it has actually been put into use in the adopting organization" (p. 497), this study understands social CRM adoption as the actual use of social media in the context of CRM.

This was also taken into consideration during the process of the literature review. The review points out that emphasis is placed on the issues regarding the theoretical concept of social CRM, usually building a framework or a model on what has already been discovered in prior research. Researchers link their conceptual models with existing theories, such as the Technology Acceptance Model (TAM) (Askool & Nakata, 2011), the Technology-Organization-Environment Framework (TOE) (Askool & Nakata, 2012), the Resource-Based View (RBV) and the Dynamic Capabilities Theory, which is the extension of RBV and usually used together with it (Trainor et al., 2014).

As already mentioned, this study focuses on the entire chain of social CRM adoption constituted by adoption factors, the extent of adoption, and performance outcomes. We will start with the findings in regards to the extent of adoption (adoption intensity) and continue with the adoption factors and performance outcomes.

4.1 Extent of social CRM adoption

While social media adds another layer of complexity to CRM practice (Verhoef et al., 2010)customer management (CM, researchers are recognizing that directing their research simply on a binary measure (adopt or not adopt) is inadequate. Therefore, they are exploring how to measure the extent of social CRM adoption or in, other words, the actual use of social CRM. Many of them are relying on prior research, especially those studies that focus on CRM capabilities and CRM processes (e.g. information relational processes, customer-facing processes), and adding the specifics of social media (e.g. customer engagement). The review of the existing literature points out that many researchers built their conceptual understandings of social CRM on the RBV theory in combination with the dynamic capabilities perspective or the equity theory (Choudhury & Harrigan, 2014; Harrigan, Soutar, Choudhury and Lowe, 2015; Trainor et al., 2014; Trainor, 2012).

For instance, the paper from Trainor (2012) presents a conceptual framework that extends a traditional CRM with the integration of social media technologies and suggests how this integration can influence organizational performance. Trainor et al. (2014) tried to follow the challenges identified by Trainor (2012). This paper provides conceptualization and measurement of social CRM capabilities.

A slightly different approach to the social CRM model is presented by Choudhury and Harrigan (2014) and Harrigan et al. (2015). The paper of Choudhury and Harrigan (2014) builds on a previous CRM model proposed by Jayachandran, Sharma, Kaufman, and Raman (2005), adopting RBV theory and the equity theory. They adopted the constructs from previous studies on CRM and included a new construct of customer engagement initiatives that indicate how business and customers interact through social media technologies. Harrigan et al. (2015) followed the study from Choudhury and Harrigan (2014). The changes in the previously mentioned model were made according to the findings. However, not all links proposed in the model were supported.

Furthermore, Rodriguez, Ajjan and Peterson (2014) argue that the effective utilization of CRM and social media starts with understanding customer processes. CRM processes at the customer-facing level are usually defined as a systematic process to manage customer relationships as they move from relationship building to relationship termination (Reinartz, Krafft and Hoyer, 2004).

Sigala (2011) exploited social CRM practices during the lifecycle phases (acquisition, retention, expansion, and win back). Malthouse, Haenlein, Skiera, Wege and Zhang (2013), in contrast, introduced framework, called the "social CRM house", discussing not only how social media engagement affects acquisition, retention, and termination (differentiating high and low customer engagement) but also supporting business areas (i.e. people, IT, performance evaluation, metrics, and strategy). Creating deep connections with customers throughout the customer engagement cycle (i.e. connection, interaction, satisfaction, retention, commitment, advocacy, engagement) introduced by Sashi (2012) is a new approach that is perceived as being relevant for social CRM. The findings of the identified papers are summarized in Table 3.

Table 3: Summarized finding of the extent of social CRM

Author	Findings
(Sigala, 2011)	Exploitation of Social CRM practices through customer life cycle phases (acquisition, retention, expansion, win back) seems to be a good approach. Still, in order to verify and enrich the study's framework, a large and more diversified sample should be used.
(Sashi, 2012)	Deep connections with customers can be created through the customer engagement cycle (connection, interaction, satisfaction, retention, commitment, advocacy, engagement). While this is the first attempt to identify the stages of the customer engagement cycle, further research to better understand each lifecycle stage is needed.
(Trainor, 2012)	CRM-related capabilities can be developed through the deployment of IT and complementary resources: relational information processing, customer linking and marketing sensing, collaborative service and support, social selling and social support. This conceptual model can serve as a starting point for further research in this area.
(Malthouse et al., 2013)	Social media engagement can be measured through customer lifecycle phases (acquisition, retention, termination).
(Trainor et al., 2014)	For the social CRM capability the organization-wide system for acquiring, disseminating and responding to customer information proposed by Srinivasan & Moorman (2005) is adopted. While the adopted construct does not include all the important specifics of social media, a measure that will cover this anomaly should be added. Furthermore, differences between B2B and B2C businesses should be taken into account.
(Choudhury & Harrigan, 2014)	The combination of the adopted construct of relational information processes proposed by Jayachandran et al. (2005) and a new construct of customer engagement initiatives provides additional insights on how business and customers interact through social media. While it was observed that the customer engagement initiatives do not influence performance, but relational information processes do, the interrelationships between customer engagement and relational information processes should be investigated.
(Rodriguez et al., 2014)	The real value of customer-oriented technologies lies in the way customer orientation processes use the information provided by the platforms (such as CRM and social media) to enhance the customer's experience.
(Harrigan et al., 2015)	The construct proposed by Choudhury and Harrigan (2014) was slightly changed. Surprisingly this study revealed that there is no direct link between relational information processes and customer relationship performance. Therefore, further investigation of the relational information processes construct is needed.

Overall, several studies attempted to capture the extent of social CRM adoption within organizations. Based on the findings, we can conclude that the adopted constructs from previous CRM studies still need improvements. This means that more specifics of social media should be added to existing measurement approaches and some existing measures accordingly reformulated. Additionally, more emphasis should be given towards the empirical investigation of the proposed concepts.

4.2 Factors influencing social CRM adoption

To identify factors that influence social CRM adoption, some researchers linked their models with the existing theories, including TAM (Askool & Nakata, 2011), TOE (Askool & Nakata, 2012) and the Dynamic Capabilities theory (Harrigan & Miles, 2014). Askool and Nakata (2011) used TAM as a starting point for building their conceptual model, identifying customers as well as organizational factors that influence social CRM adoption. In 2012 they conducted new research in which they studied enterprise social CRM adoption (Askool & Nakata, 2012).

They used the TOE framework to predict organizations' adoption intention. They used semi-structured interviews and identified several differences between the results of the study and other literature in the field of information systems (i.e. technological and knowledgeable IT staff are not core factors of social CRM adoption; customers were not considered to be the main driver to adopt social CRM).

They propose that further research should extend the model with other factors (i.e. relative advantage, complexity, compatibility, top management support, inter-organizational networks, organizational innovativeness), followed by in-depth analysis of social CRM influence on both customer and organizations. Harrigan and Miles (2014) used the Dynamic capabilities theory in order to investigate factors that influence social CRM activities of SMEs. They found that online communities are presenting the biggest shift from eCRM to social CRM. This factor describes how the importance of customer engagement in online communities drives SMEs to manage and use online communities in CRM.

There are also some studies in which researchers did not provide a direct link to the existing theories. Woodcock et al. (2011) for instance present a checklist that can be helpful for organizations that are planning to integrate social CRM with their existing way of how they mana-

Table 4: The factors considered in previous studies

Factors	Authors	Description
Information technology infrastructure	(Malthouse et al., 2013; Woodcock et al., 2011)	IT architecture seems to be crucial because SM tools need to be integrated with traditional CRM systems in order to obtain a full picture of customer's behavior.
Employee skills	(Askool & Nakata, 2012; Malthouse et al., 2013; Sigala, 2011; Woodcock et al., 2011)	Availability of sufficiently skilled experts proves to be a major challenge towards adoption.
Organizational culture	(Harrigan & Miles, 2014; Malthouse et al., 2013; Woodcock et al., 2011)	A company culture needs to encourage employees to actively participate and engage in social media that can influence adoption.
Perceived benefits	(Askool & Nakata, 2012; Malthouse et al., 2013; Sigala, 2011; Woodcock et al., 2011)	The appropriate metrics for measuring and managing the social value of customers influence the perception of the perceived benefits and consequently influence on adoption.
Management support	(Askool & Nakata, 2012; Woodcock et al., 2011)	The top management encouragement towards the use of social media seems to have a great influence the adoption.
Social CRM strategy	(Malthouse et al., 2013; Sigala, 2011; Woodcock et al., 2011)	An organization should determine its social CRM strategy according to the level of customer engagement. This includes evolving social CRM policies and guidelines that can influence adoption.

ge customers' relationship. The management support has been identified as a very important along with building and retaining the skilled employees in this area, evolving working culture, evolving social CRM policies and guidelines, changing the nature of measurement and evaluation and development of right IT and data architecture. A similar set of factors was also identified by Sigala (2011) and Malthouse et al. (2013). Table 4 presents factors that several researchers considered as important when adopting social CRM.

As already mentioned, the researchers used quite a few factors that had been already identified as important in previous studies on CRM adoption. Fewer studies identified new factors that are perceive relevant only for the social CRM adoption (e.g. social CRM strategy, online communities). We can conclude that the factors that have proven to have an impact on the adoption of CRM are also considered important in the context of social CRM adoption. Because the above-mentioned studies are mainly of a conceptual nature or the results are based on interviews the importance or relevance of factors should be verified on a larger sample. Additionally more emphasis should be given to how these factors influence the extent of social CRM adoption.

4.3 Impacts of social CRM adoption on performance outcomes

As already noted in the extent of social CRM adoption section some researchers linked social CRM with performance outcomes to provide evidences on how social CRM can deliver benefits for organizations as well as for customers (Baird & Parasnis, 2011; Choudhury & Harrigan, 2014; Harrigan et al., 2015; Rodriguez et al., 2014; Trainor et al., 2014; Trainor, 2012; Woodcock et al., 2011).

Furthermore, researchers also argue that there is a need to identify appropriate performance outcomes for social CRM (e.g. Harrigan et al., 2015; Michaelidou, Siamagka and Christodoulides, 2011; Sigala, 2011).

Greenberg, the author of the most frequently cited social CRM definition, was also one of the first who posit the question regarding how to measure social CRM performance outcomes. In his paper Greenberg, 2010), he discussed how the nature of consumers' web activity is changing organizations' performance measurement approaches. He notices that the influence of social CRM on performance outcomes cannot be measured merely by traditional quantitative measures, but it also requires new measures that "can be used to measure the emotional tone and influence of the conversations in the ether that are going on outside the corporate firewalls" (Greenberg, 2010, p. 417).

According to Verhoef, Reinartz and Krafft (2010) there are several performance outcomes of traditional CRM, including customer retention, customer lifetime value/customer equity and new product performance that can also be related to social CRM. Furthermore Sigala (2011), who studied the usage and readiness of Greek tourism organizations for social CRM, proposed further research that will assess the effectiveness of social CRM practices. The author suggests examining the impact of social CRM practices on performance outcomes, including customer loyalty, customer profitability and sales data, quality levels, and company reputation. Similarly Malthouse et al. (2013) suggested performance evaluation and providing guidelines for developing KPIs to measure the performance of each component of the framework they proposed (CRM house) including performance outcomes.

Studies that used the RBV theory in combination with the dynamic capabilities perspective or the equity theory made some progress and empirically tested the impact of social CRM on customer relationship performance.

While Trainor et al. (2014) found that social CRM capabilities have a positive influence on customer relationship performance (customer satisfaction and customer loyalty), Choudhury and Harrigan (2014) did not support the link between customer engagement initiatives and customer relationship performance (environmental dynamism and competitive intensity).

However, they found a link between relational information processes and customer relationship performance. Therefore, their study illustrates the fact that social CRM through a range of processes and relationships can improve customer relationship performance. Surprisingly, Harrigan et al. (2015) did not support the link between relational information processes and customer relationship performance (customer satisfaction and customer loyalty). These authors emphasized doubts about appropriate performance measures taken and suggested the development of more comprehensive social CRM performance measures.

Evidently, there is a need for more a comprehensive social CRM performance model. One of the latest attempts toward such a model is proposed by Wittkuhn et al. (2015) and (Küpper et al., 2015). The latter investigated the relationship between four social CRM performance dimensions: infrastructure performance, process performance, customer performance and organizational performance. This approach provides us with deeper insights into social CRM performance within a company. Furthermore, they propose the extension of their social CRM performance model to investigate, for example, the impact of social CRM use on performance outcomes.

Overall, the above-mentioned researchers identified the impact of social CRM adoption on several performance outcomes, usually referring to the dimensions of customer relationship performance (e.g. customer loyalty) and organizational performance (e.g. customer lifetime value). Taking into consideration those two performance dimensions, the following performance outcomes were considered as important by several researchers (Table 5).

Table 5: Performance outcomes considered as important in previous studies

Performance outcomes	Authors	Description
Customer loyalty	(Greenberg, 2010; Küpper et al., 2015; Sigala, 2011; Trainor et al., 2014; Woodcock et al., 2011)	Development of a strong customer relationship positively influences customer loyalty.
New product performance	(Küpper et al., 2015; Trainor et al., 2014; Verhoef et al., 2010; Woodcock et al., 2011)	The continuous development of new products is an important source of competitive advantage. The alignment of new products with customer needs through company employees who manage customer relationships is, therefore, crucial.
Customer lifetime value	(Küpper et al., 2015; Verhoef et al., 2010; Woodcock et al., 2011)	Proper customer engagement can improve net profit contribution of the customer to the organization over time.
Company reputation	(Küpper et al., 2015; Sigala, 2011; Woodcock et al., 2011)	Effectively addressing customer' needs can influence positive word-of-mouth and improve company reputation.
Peer-to-peer communication	(Greenberg, 2010; Küpper et al., 2015; Trainor et al., 2014)	Proper customer encouragement can enhance and simplify the exchange of information between customers.

Researchers are mainly relying on performance outcomes that were already identified in traditional CRM studies. Furthermore, researchers commonly pointed out one performance outcome that is specifically relevant for social CRM: peer-to-peer communication. To conclude, we have noticed the increase of papers that attempt to identify more appropriate performance outcomes for social CRM in the last two years. Nevertheless, the researchers that empirically explored the impact of social CRM on performance outcomes suggest further research in this context.

5 Conclusion and further research directions

This study aims to conduct a literature review on social CRM adoption with particular emphasis on factors and performance outcomes based on recently published papers in journals and conferences between 2010 and 2015. We reviewed 31 articles and classified our findings in three categories: the extent of social CRM adoption, the factors influencing social CRM adoption, and the impact of social CRM adoption on performance outcomes. With this categorization, we tried to capture the entire chain of social CRM adoption.

Our observations have confirmed that many researchers proposed social CRM models based on existing theories and concepts of traditional CRM. Those who empirically explored the proposed social CRM models also suggest further adjustments/extensions of their models. Furthermore, despite the increase of publications on social CRM adoption, the analyzed publications are still mainly of a conceptual nature.

Therefore, the systematic and empirical examination of factors that influence social CRM adoption and its implications for performance outcomes is needed. Additionally, more emphasis should be given on how social media extent traditional CRM. Finally, the findings from existing social CRM models should be integrated into a comprehensive social CRM model that will capture the entire chain of social CRM adoption. This will give an overview of the entire social CRM adoption situation.

This literature review on social CRM in the selected period (since 2010) might have been affected by some limitations. First, even though a variety of journals and several renowned conferences in the field of information systems and marketing were considered in this study, it may happen that this topic had also been covered in other journals and conferences. Furthermore, as this study was

conducted for a limited period, it could be possible that we missed some previous findings regarding this topic as well. Additionally, there might be studies that we missed, because they investigate similar phenomena but discuss it with different terms.

Literature

Acker, O., Gröne, F., Akkad, F., Pötscher, F., & Yazbek, R. (2011). Social CRM: How Companies Can Link into the Social Web of Consumers. *Journal of Direct, Data and Digital Marketing Practice*, *13*(1), 3–10. Retrieved from http://papers.ssrn.com/abstract=1899459

Askool, S., & Nakata, K. (2011). A conceptual model for acceptance of social CRM systems based on a scoping study. *AI & SOCIETY*, *26*(3), 205–220, http://doi.org/10.1007/s00146-010-0311-5

Askool, S., & Nakata, K. (2012). Investigation into the adoption intention of social CRM in Saudi banks. In *International Conference on Information Society* (pp. 402–408). Retrieved from http://www.deepdyve.com/lp/institute-of-electrical-and-electronics-engineers/investigation-into-the-adoption-intention-of-social-crm-in-saudi-banks-eti1mNcLca

Awasthi, P., & Sangle, P. S. (2012). Adoption of CRM technology in multichannel environment: a review (2006□2010). *Business Process Management Journal*, *18*(3), 445–471, http://doi.org/10.1108/14637151211232641

Baird, C. H., & Parasnis, G. (2011). From social media to Social CRM: reinventing the customer relationship. *Strategy & Leadership*, *39*(6), 27–34, http://doi.org/10.1108/10878571111176600

Chen, I. J., & Popovich, K. (2003). Understanding customer relationship management (CRM): People, process and technology. *Business Process Management Journal*, *9*(5), 672–688, http://doi.org/10.1108/14637150310496758

Choudhury, M. M., & Harrigan, P. (2014). CRM to social CRM: the integration of new technologies into customer relationship management. *Journal of Strategic Marketing*, *22*(2), 149–176, http://doi.org/10.1080/0965254X.2013.876069

Cooper, H. M. (1988). Organizing knowledge syntheses: A taxonomy of literature reviews. *Knowledge in Society*, *1*(1), 104–126, http://doi.org/10.1007/BF03177550

Damanpour, F., & Schneider, M. (2008). Characteristics of Innovation and Innovation Adoption in Public Organizations: Assessing the Role of Managers. *Journal of Public Administration Research and Theory*, *19*(3), 495–522, http://doi.org/10.1093/jopart/mun021

Faase, R., Helms, R., & Spruit, M. (2011). Web 2.0 in the CRM domain: defining social CRM. *International Journal of Electronic Customer Relationship Management*, *5*(1), 1, http://doi.org/10.1504/IJECRM.2011.039797

Greenberg, P. (2009). *CRM at the Speed of Light, Fourth Edition : Social CRM 2.0 Strategies, Tools, and Techniques for Engaging Your Customers: Social CRM 2.0 Strategies, Tools, and Techniques for Engaging Your Customers* (4th ed., Vol. 2009). McGraw Hill Professiona. Retrieved from http://books.google.si/books/about/CRM_at_the_Speed_of_Light_Fourth_Edition.html?id=YWOFpc2D_c8C&pgis=1

Greenberg, P. (2010). The impact of CRM 2.0 on customer insight. *Journal of Business Industrial Marketing*, *25*(6), 410–419, http://doi.org/10.1108/08858621011066008

Harrigan, P. (2011). Conceptualising social CRM in SMEs. In *Australian and New Zealand Marketing Association Conference*. Australian and New Zealand Marketing Association Conference. Retrieved from http://eprints.soton.ac.uk/185425/1/ANZMAC_Paper_2011.doc

Harrigan, P., & Miles, M. (2014). From e-CRM to s-CRM. Critical factors underpinning the Social CRM activities of SMEs. *Small Enterprise Research*, *21*(1), http://doi.org/10.5172/ser.v21i1.5496

Harrigan, P., Soutar, G., Choudhury, M. M., & Lowe, M. (2015). Modelling CRM in a social media age. *Australasian Marketing Journal (AMJ)*, *23*(1), 27–37, http://doi.org/10.1016/j.ausmj.2014.11.001

Jayachandran, S., Sharma, S., Kaufman, P., & Raman, P. (2005). The Role of Relational Information Processes and Technology Use in Customer Relationship Management. *Journal of Marketing*, *69*(4), 177–192, http://doi.org/10.1509/jmkg.2005.69.4.177

Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, *54*(3), 241–251, http://doi.org/10.1016/j.bushor.2011.01.005

Kiron, D., Palmer, D., Nguyen Phillips, A., & Berkman, R. (2013). *Social Business: Shifting Out of First Gear | MIT Sloan Management Review*. Retrieved from http://sloanreview.mit.edu/reports/shifting-social-business/

Küpper, T., Jung, R., Lehmkuhl, T., Walther, S., & Wieneke, A. (2014). Performance Measures for Social CRM: A Literature Review. In *27th Bled eConference: eEcosystems* (pp. 125–139). Retrieved from https://domino.fov.uni-mb.si/proceedings.nsf/0/400cee09cde2a24ec1257cee0042e351/$FILE/09_K%C3%BCpper_Jung_Lehmkuhl_Walther_Wieneke.pdf

Küpper, T., Lehmkuhl, T., Wittkuhn, N., Wieneke, A., & Jung, R. (2015). Social CRM Performance Model: An Empirical Evaluation. In *28th Bled eConference: #eWellBeing* (pp. 418–435). Retrieved from https://domino.fov.uni-mb.si/proceedings.nsf/Proceedings/2986D15ABF365087C1257E5B004C6396/$File/4_Kupper.pdf

Leary, B. (2008). Social CRM: Customer Relationship Management in the Age of the Socially-Empowered

Customer - KnowledgeStorm. Retrieved from http://www.knowledgestorm.com/sol_summary_5136719.asp

Lehmkuhl, T., & Jung, R. (2013). Towards Social CRM – Scoping the Concept and Guiding Research. *BLED 2013 Proceedings*. Retrieved from http://aisel.aisnet.org/bled2013/14

Levy, Y., & Ellis, T. A systems approach to conduct an effective literature review in support of information systems research, Informing Science: The International Journal of an Emerging Transdiscipline 181 – 212 (2006). Retrieved from http://nsuworks.nova.edu/gscis_facarticles/41

Malthouse, E. C., Haenlein, M., Skiera, B., Wege, E., & Zhang, M. (2013). Managing Customer Relationships in the Social Media Era: Introducing the Social CRM House. *Journal of Interactive Marketing*, *27*(4), 270–280, http://doi.org/10.1016/j.intmar.2013.09.008

Michaelidou, N., Siamagka, N. T., & Christodoulides, G. (2011). Usage, barriers and measurement of social media marketing: An exploratory investigation of small and medium B2B brands. *Industrial Marketing Management*, *40*(7), 1153–1159, http://doi.org/10.1016/j.indmarman.2011.09.009

Paulissen, K., Milis, K., Brengman, M., Fjermestad, J., & Romano, Jr., N. (2007). Voids in the Current CRM Literature: Academic Literature Review and Classification (2000-2005). In *2007 40th Annual Hawaii International Conference on System Sciences (HICSS'07)* (p. 150c–150c). IEEE, http://doi.org/10.1109/HICSS.2007.609

Piskar, F., & Faganel, A. (2009). A Successful CRM Implementation Project in a Service Company: Case Study. *Organizacija*, *42*(5), 199–208. Retrieved from http://organizacija.fov.uni-mb.si/index.php/organizacija/article/view/310/620

Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). The Customer Relationship Management Process: Its Measurement and Impact on Performance. *Journal of Marketing Research*, *41*(3), 293–305, http://doi.org/10.1509/jmkr.41.3.293.35991

Rodriguez, M., Ajjan, H., & Peterson, R. M. (2014). CRM/social media technology: impact on customer orientation process and organizational sales performance. *Journal Of Marketing Development and Competitiveness*, *8*(1), 85–97.

Sarner, A., E., T., Mann, J., Dunne, M., Davies, J., & Fletcher, C. (2011). *Magic Quadrant for Social CRM. Gartner*. Retrieved from https://www.gartner.com/doc/2179417

Sashi, C. M. (2012). Customer engagement, buyer-seller relationships, and social media. *Management Decision*, *50*(2), 253–272, http://doi.org/10.1108/00251741211203551

Sigala, M. (2011). eCRM 2.0 applications and trends: The use and perceptions of Greek tourism firms of social networks and intelligence. *Computers in Human Behavior*, *27*(2), 655–661, http://doi.org/10.1016/j.chb.2010.03.007

Sussin, J. (2015). *Top Use Cases and Benefits of Social for CRM in 2015*. Retrieved from http://www.gartner.com/document/2984019?ref=unauthreader#

Trainor, K. J. (2012). Relating Social Media Technologies to Performance: A Capabilities-Based Perspective. *Journal of Personal Selling and Sales Management*, *32*(3), 317–331, http://doi.org/10.2753/PSS0885-3134320303

Trainor, K. J., Andzulis, J. (Mick), Rapp, A., & Agnihotri, R. (2014). Social media technology usage and customer relationship performance: A capabilities-based examination of social CRM. *Journal of Business Research*, 1201–1208, http://doi.org/10.1016/j.jbusres.2013.05.002

Verhoef, P. C., Reinartz, W. J., & Krafft, M. (2010). Customer Engagement as a New Perspective in Customer Management. *Journal of Service Research*, *13*(3), 247–252, http://doi.org/10.1177/1094670510375461

Wittkuhn, N. S., Lehmkuhl, T., Küpper, T., & Jung, R. (2015). Social CRM Performance Dimensions: a Resource-Based view and Dynamic Capabilities Perspective. In *28th Bled eConference: #eWellBeing* (pp. 368–388). Retrieved from https://domino.fov.uni-mb.si/proceedings.nsf/Proceedings/DF0CCA16D41BEB1CC1257E5B004B834D/$File/1_Wittkuhn.pdf

Woodcock, N., Green, A., & Starkey, M. (2011). Social CRM as a business strategy. *Journal of Database Marketing & Customer Strategy Management*, *18*(1), 50–64, http://doi.org/10.1057/dbm.2011.7

Yawised, K., Marshall, P., & Stockdale, R. (2013). Social CRM: A Review of the Academic and Practitioner Literatures and Research Agendas. In *Malaysian Conference on Information Systems* (pp. 101–107).

Yawised, K., Marshall, P., & Stockdale, R. (2013, April 23). Social CRM: A Review of Academic and Practioner Literatures and Research Agendas. *Malaysian Conference on Information Systems MCIS2013*. Retrieved from http://ecite.utas.edu.au/84151/1/Social_CRM_A Review of Literature and Research Agendas.pdf

Marjeta Marolt is a teaching assistant and a researcher at the Faculty of Organizational Sciences, University of Maribor, Slovenia. Her main research interests include social CRM, e-business and new business models. She was involved in several EU and national projects related to the field of information systems. She obtained her bachelor's degree from University of Maribor in the field of Organizational Information Systems. She is currently a PhD student at the University of Maribor, Faculty of Organizational Sciences.

Andreja Pucihar is an Associate Professor at the Faculty of Organizational Sciences, University of Maribor, Slovenia. She obtained her PhD in the MIS field from the University of Maribor. She is a member of IS department and head of eBusiness Lab. Her recent research is mainly focused to IS innovation, in particular in e-business, business models, social media, living labs and open innovation. She has published over 150 papers in journals and conference proceedings. Since 2004 she has been actively involved into several national, international (EU, CE, cross-border, bilateral) and industry projects. She has been involved in several program committees of international conferences and editorial boards of international journals. Since 2009 she has been serving as a program committee chair of annual international Bled eConference.

Hans-Dieter Zimmermann is a Senior Lecturer at the Institute for Information and Process Management IPM at the FHS St. Gallen, University of Applied Sciences, Switzerland. He has a background in Business Administration and received his doctoral degree in Information Management from the University of St. Gallen (HSG), Switzerland. He is a Co-Editor in Chief of Electronic Markets – The International Journal on Networked Business. Furthermore, he is an active member of the international scientific community. His major research interests concern changing patterns of communication and interaction arising from the emerging Digital Economy. Especially he is interested in the fields of Electronic Markets and Electronic Business, and in the increasing importance of information and communications technologies in societies. Recently he was involved in research projects addressing open societal innovation and eParticipation.

Sprejetje družbenega CRM-ja in njegov vpliv na uspešnost poslovanja: pregled literature

Ozadje in namen: Družbeno upravljanje odnosov s strankami (družbeni CRM) je dokaj nov pristop, ki temelji na uporabi družbenih medijev pri upravljanju odnosov s strankami. Kljub prednostim, ki jih družbeni CRM prinaša, se mnoge organizacije šele spoznavajo s tem pristopom. Da organizacije ne bi uporabljale družbenih medijev samo za namen tržnega komuniciranja, temveč tudi za namen prodaje in poprodajnih aktivnostih, se morajo le-te zavedati dejavnikov, ki vplivajo na sprejetje družbenega CRM-ja in posledice sprejetja družbenega CRM-ja. Namen tega prispevka je podati pregled ugotovitev raziskav na področju sprejetja družbenega CRM-ja s poudarkom na dejavnikih in posledicah sprejetja.
Metodologija: Da bi zagotoviti čim bolj celovit pogled nad sprejetjem družbenega CRM-ja, smo k pregledu literature pristopili sistematično. Iskali smo po prosto dostopnih podatkovnih bazah in zbornikih najbolj znanih konferenc s področij informacijskih sistemov in marketinga. Ugotovitve relevantnih prispevkov smo razvrstili v tri skupine: obseg sprejetja družbenega CRM-ja; dejavniki, ki vplivajo na sprejetje družbenega CRM-ja; posledice sprejetja družbenega CRM-ja.
Rezultati: Kljub porastu literature zaradi aktualnosti področja, večina prispevkov družbeni CRM obravnava teoretično in podaja konceptualne modele. Zato ugotavljamo, da je potrebno modele empirično preveriti.
Zaključek: Naše ugotovitve so potrdile, da mnogi raziskovalci pri raziskovanju področja sprejetja družbenega CRM-ja in njegovega vpliva na uspešnost poslovanja temeljijo na obstoječih teorijah in konceptih tradicionalnega CRM-ja. Kljub temu raziskovalci ugotavljajo pomanjkljivosti njihovih modelov in predlagajo nadaljnje prilagoditve oziroma razširitve teh modelov.

Ključne besede: *družbeni CRM; obseg sprejetja; dejavniki; posledice sprejetja*

DOI: 10.1515/orga-2015-0018

Predictors of Users' Satisfaction with E-payment System: a Case Study of Staff at the University of Ilorin, Nigeria

Adeyinka Tella, Isah Abdulmumin

University of Ilorin, Department of Library and Information Science, Nigeria
tella.a@unilorin.edu.ng, abdulmumin.isah@yahoo.com

Background and Purpose: Many organisations are using the e-payment system; however, its effectiveness has not been determined particularly in the Nigeria context. The University of Ilorin as educational organisation started using e-payment system in 2010 and up till now there has been limited or no study conducted to examine whether or not workers are satisfied with the new payment system together with other related ones they are familiar with. It is in the light of this that this study examined users' satisfaction with the e-payment system at the University of Ilorin, Nigeria.
Design/Methodology/Approach: A sample of 260 academic and non-academic staff was taken from six out 12 faculties that made up the university. Using a survey research approach data was collected with a modified questionnaire. Five research questions were developed to guide the study.
Results: The results revealed that, respondents (93.5%) were adequately satisfied, satisfied and moderately satisfied, while, only (6.5%) of the respondents were less satisfied and dissatisfied. Perceived speed was identified as the characteristics users mostly satisfied with, followed by system security, traceability, and convenience. Moreover, there is significant correlation among the entire e-payment characteristics/factors (perceived speed, security, anonymity, traceability, perceived ease of payment, and convenience); and that all the six factors jointly predict users' satisfaction with the e-payment system. In order of magnitude of the prediction/contribution to e-payment, users' satisfaction, perceived speed made the most significant prediction/contribution.
Conclusion: Based on the findings, the study concluded a considerable percentage of the respondents (93.5%) are satisfied with the e-payment system at the University of Ilorin, Nigeria. In lieu of this therefore, there is need to improve the e-payment system so that all and sundry could be satisfied.

Keywords: *users' satisfaction, e-commerce, electronic payment system (EPS), salary, University of Ilorin*

1 Introduction

Information communication technology (ICT) revolution has resulted to the emergence of e-commerce which has also created new financial needs which in many cases cannot be effectively fulfilled by the traditional payment systems. In this regard, nearly all interested stakeholders are exploring the varieties of electronic payment system and issues surrounding it and digital currency.

In the context of this study, the e-payment system is in form of a payroll application which the employer (the university) uses in money transaction with other users (the staff) to effect payment instead of cash. Other examples are e-payment solutions for vehicle licensing and revenue collection, InterSwitch ATM, Bank transfer, Valuecard, etc. all of which academic and non-academic staff are important users. These users use the system anytime of the month and mostly monthly for payment of salary or reward/remuneration of services rendered by any staff, renew of vehicle papers, etc. The system is not an out of box application but rather a customised developed application which users instructed to effect payment and which the receiver is alerted immediately such payment is made.

In the year 2010, the University of Ilorin, Nigeria introduced electronic cheque payment for the payment of salaries to the workers to replace the old form of payment which has its advantages and disadvantages for the

Received: December 12, 2014; revised: August 20, 2015; accepted: September 15, 2015

(staff) customers and merchants (University's Banks). The advantages of the old method include but not limited to customers opportunity of collecting cheque by self and deposit directly by self into their account while the disadvantages include long processing/preparation of salary vouchers, high incidence of bounce cheques, lack of an electronic means of verifying valid cheques, the poor interconnection of banks and a lack of an electronic cheque clearing system among others.

As revealed in the literature, this e-payment system (EPS) has number of characteristics such as security, acceptability, perceived enjoyment, and perceived speed, ease of payment, convenience, cost, anonymity, control, and traceability (Abrazhevich, nd*; Tella, 2012; Tella and Olasina, 2014). Meanwhile, the new e-payment system has its attendance challenges including ignorance on the part of the users, poor banking culture, lack of trust, illitracy and the love for status quo to mention but just few.

Many organisations have been using e-payment system; however, its effectiveness has not been determined particularly in the Nigeria context. The University of Ilorin started using this system of payment in 2010, but unfortunately, there has been no single study conducted to examine whether or not workers are satisfied with the new payment system. The factors that lead to the stakeholders' satisfaction concerning the e-payment system have not been established.

Available relevant studies focus only on the voluntary use of an e-payment system; however, the mandatory settings are also interesting area to be studied. The relationships have been consistently confirmed in voluntary context, albeit, it is not clear whether the same relationships hold in mandatory settings such as the University of Ilorin. A mandatory use of e-payment system environment is defined as one in which users are required to use e-payment system in order to perform better in their jobs (Brown et al., 2002). As it has been observed, some research are located in a mandatory use of e-payment settings for initial IS acceptance (e.g. Venkatesh et al., 2003). However, very few studies are found in mandated IS satisfaction domain (Sorebo and Eikebrokk, 2008).

These are considered as knowledge gaps that need to be filled. In the light of this therefore, the researcher considers it necessary to determine how satisfied the staff of the University of Ilorin are as far as the use of e-payment system for the payment of their salaries since 2010 is concerned. Not this alone, it is also important to determine how satisfied the users are with other related e-payment products they are familiar. It is assumed that the findings from the study will assist in improving the value of this system of payment. The outcomes might also interest other stakeholders to eventually emulate the gesture thereby commencing the use of e-payment system for the payment of salaries to their staff and other monetary transactions. Thought the study is limited to the University of Ilorin, Nigeria; however, the outcomes from the study can be helpful to other universities in the country who are in the planning stage of introducing e-payment for workers' salary.

2 Literature Review

2.1 E-payment System (EPS)

The revolution of ICT is now given room for the 'e' in everything including e-banking, e-transaction, e-registration, e-shopping, e-payment, e-learning, e-library, etc. This study only focuses on e-payment. E-payment is considered a part of e-commerce transaction that includes electronic payment for buying and selling goods or services offered on the Internet. In other words, it is a payment system in which monetary value is transferred electronically or digitally between two entities as compensation or consideration for the receipt of goods or services. An entity in this regard refers to a bank, business, government or even an individual customer (Tan, 2004, 3). According to this author, any payment not affected by paper-based instruments is considered an e-payment transaction. It should be noted that advances in technology in some parts of the world make it possible for cheques to be treated as e-payment instruments.

E-payment users have the opportunity of sending or instructing payment orders through electronic terminals either through selves or by authorizing other people, to realize money payment and capital transition. E-payment subsumes online payment, telephone payment, mobile payment and self-service terminal payment. E-payment users refer to users who use e-payment channels and tools to complete payment behaviour. In a broader sense, electronic payment systems can be categorised into four (Anderson, 1998). These are: Online Credit Card Payment System, Online Electronic Cash System, Electronic Cheque System, and Smart Cards based Electronic Payment System. Each category has merits and demerits both for the customers and merchants. There are number of criteria peculiar to these payment systems such as security, acceptability, convenience, cost, anonymity, control, and traceability. Tan (2004, 3) on his own categorised e-payment transactions into three segments: retail e-payment, corporate e-payment and wholesale e-payment. He explained that the retail e-payment segment includes three types of transactions: consumer-to-business (C2B), business-to-consumer, and peer-to-peer (P2P) (or consumer-to-consumer C2C). The B2B transaction covers the payment of wages or salaries from employers to employees or ETFs such as refunds of monetary value from business to consumer. This exactly is the type focused in this study. Transformation in electronic payment system aroused as a result of the development in EFT (Electronic Fund Transfer) technology. EFT is a technology that enables the

transfer of funds from the bank account of an individual or organization to another. Similarly, EFT is the action of using this technology (Cavarretta and de Silva, 1995).

2.3 User Satisfaction

One of the most important dependent variables used in measuring the success of information system due to the non-volitional status of the majority of the systems is user satisfaction. User Satisfaction (US) is concerned with examining the successful interaction between the IS and its users. According to Doll and Torkzadeh (1988, 261) user satisfaction describes 'an affective attitude towards a specific computer application by someone who interacts with the application directly'. In summary, user satisfaction can be regarded as a function of perceived ease of use and perceived usefulness, and so it's assumed that if users are fully satisfied with an information system, that system is a success.

In other words, it is observed from literature on information system success and satisfaction that common variables used to measure information system success include system effectiveness, users' satisfaction and system adoption or acceptance. It is on the basis of this that user satisfaction was used in this study as measure of e-payment success. This is in congruent with (Delone & Mclean, 2003) position that any of net Benefits, (Intention to) Use, or User Satisfaction can be used as dependent construct or factor of system success.

2.4 Information Systems and Users' Satisfaction Related Studies

Tijani and Ilugbemi (2015) examine the impact of electronic payments channels (EPC) on National development (ND). The survey focused current and savings accounts customers of deposit money banks in Nigeria. A total of 120 copies of questionnaire were administered in 6 different banks in Ado-Ekiti metropolis. Ninety-Eight (98) copies of questionnaires were returned for processing. Inferential statistics specifically chi-square was used to analyzed the collected data. The results demonstrate that electronic payment channels (EPC) have impacted on the economy and therefore contributing positively to national development (ND). Based on this finding, it was recommended among others that the Central Bank of Nigeria (CBN) should introduce other e-payment products for the promotion of trade and commerce in Nigeria; and that they should embark on rigorous campaign for the total adoption of e-payment products especially at the grassroots level.

Alao and Sorinola (2015) investigate the customers' satisfaction with the ongoing cashless policy in Ogun State, Nigeria with a survey of bank customers in Abeokuta. Questionnaire was used to gather data from the respondents while the collected data was analyzed using descriptive statistics. The formulated hypotheses were tested with correlation coefficient. The findings reveal that cashless policy contributed significantly to customers' satisfaction in Ogun State. The study concluded based on this finding that the cashless policy is customer friendly and progressive. Therefore, it was recommended, among others, that infrastructures should be improved to ensure easy operation of the policy in Ogun state and Nigeria as a whole.

Irani, Sivarajah, Molnar and Lee (2014) measured citizen satisfaction with the electronic London Congestion Charging (LCC) payment system offered by Transport for London (TFL) in the United Kingdom (UK). The study reported the results of a survey of 500 users of the TFL LCC online payment system. Four dimensions emanated from COBRA model that comprise the cost, opportunity, benefits and risk assessment constructs were used to capture data on satisfaction.

The study demonstrated that most citizens using the LCC electronic service are satisfied with the service and that the service meets their essential needs. The study concluded that the feedback from the respondents can be utilized to determine the areas that require additional improvement in the current electronic LCC e-service system and its influences on user satisfaction. The Irani et al. (2014) study was conducted in the UK focusing on London Congestion Charging (LCC) payment system by transport for London which does not even exist in Nigeria while the current study on the hand focus on the e-payment system, a newly adopted system of payment for the workers' salary.

In another related study, Adeyemi and Ola (2014) investigated the impact of internet banking on the customer satisfaction level in the banking sector of Nigeria. A structured questionnaire was used to collect data from a sample of 90 customers of 10 different banks. Data collected were analyzed using regression analysis with the aid of Statistical Package for Social Sciences (SPSS) software.

The results, revealed among others, that the independent variables (i.e. internet banking and quality service) were significant joint predictors of customer satisfaction ($F(2, 87) = 91.3035; R2 = 0.677; P< .01$). The independent variables jointly explained 67.74% of variance of customer satisfaction. The study recommended based on the findings that banks' customers should be educated on how to make use of internet banking products and that Nigeria government should also enact law that will govern internet banking which will not allow unfair and deceptive trade practice by the supplier and unauthorized access by hackers.

Tella and Olasina (2014) examined the technology acceptance model (TAM), to predict the users' intentions to continue using e-payment system. The hypothesized model was validated empirically using a sample data collected from a modified e-payment questionnaire. A simple ran-

dom sample technique was used to select 250 academic and non-academic staff at the University of Ilorin, Nigeria. The results show correlation among perceived usefulness and attitude to use, perceived ease of use and perceived usefulness, perceived ease of use and attitude; perceived enjoyment and continuance intention to use, speed and actual use. Additionally, attitude, satisfaction and actual use were all associated with continuance intention. Moreover, all the nine e-payment predictive factors together made 65% of e-payment continuance intention, and similarly; perceived usefulness, perceived ease of use, enjoyment, speed; perceived benefits, user satisfaction, actual use and attitude are good predictors of e-payment continuance intention.

Olanipekun, Braimo and Ajagbe (2013) examined the impact of e-banking on human resource performance and satisfaction. Questionnaire was used to source for data from fifty randomly selected respondents which constitutes the sample while Chi-square analysis was used to analyze the collected data. The study demonstrated that introduction of electronic banking has impacted positively on the bank's human resource performance. It has also resulted to improved efficiency and effectiveness of service delivery by bank workforce and has enhanced customers' satisfaction. The study recommended that critical infrastructures that aid the usage of e-banking products should be provided.

Hamid and Cheng (2013) identified young adult's perception of e-payment risk and their behaviour towards different payment methods. Survey questionnaire was distributed to gather data from the students of tertiary institutions in a metropolitan city of Malaysia. The findings showed significant difference in perceived risk between cash and e-payment but less significant in terms of volume of purchase.

Tella (2012) synthesized the technology acceptance model (TAM) to explain and predict the success of e-payment system using users' satisfaction as dependent variable. Data was collected using a modified e-payment questionnaire. The sample for the study consisted of 74 teaching and non- teaching academic staff from the Faculty of Communication and Information Sciences, University of Ilorin, Nigeria. The results revealed correlation among perceived benefits, perceive enjoyment, speed; service quality, perceive ease of use and actual use and e-payment success. Moreover, the entire seven e-payment constructs together made 69% of e-payment system success. In addition, perceived benefits, perceive enjoyment, speed; service quality, perceive ease of use and actual use are good predictors of e-payment system success. The study pointed out that instead of making use of self-reported measure, future research should consider developing more objective and accurate measure for the determining the e-payment success.

Adeoti and Osotimehin (2012) investigated the consumers' satisfaction with adoption of e-payment system in Nigeria. Data for the study was collected from bank customer. Generally, the result indicated that less than 10% of the consumers were satisfied with the speed of transaction, extent of service provided by the merchants, awareness, and security. The study called for improvement of the consumer interface in order to achieve the objective of the cashless economy which the country is aiming at.

Chavosh, Halimi and Espahbodi (2011) investigated bank customers' satisfaction with e-payment services in Malaysia. Through a review of literature, the research considered issues associated with electronic payment and discussed its advantages. Thereafter, a comparative analysis was provided by looking at the satisfaction rate with e-payment services in Malaysia's Banking Industry between two sample groups in Penang.

These two groups consist of respondents who are holders of Degree and Non-Degree users of electronic payment bank services. The results of the study demonstrated that in spite of inconveniences, cost and some security concerns both groups of respondents indicated high level of satisfaction with e-payment services. The study found inconvenience to be the most important challenge identified by Non-Degree Holders, while Degree Holders were more concerned about security issues. The study concluded by pointing to the fact that the outcomes from the research can be used as platform for bank manager and e-payment companies to improve their systems and services. This study differs from the current research in terms of setting. The former was conducted in the banking sector while the later was conducted in an academic environment.

Ayo, Adewoye and Oni (2010) in a review and evaluation of the state of e-Banking implementation in Nigeria and the influence of trust on the adoption of e-Payment from the perspective of extended technology acceptance model (TAM). The study considered factors such as organizational reputation, perceived risk and perceived trust in the management of banks as they enhance customer loyalty. The results show that perceived ease of use and perceived usefulness are not only antecedent to e-banking acceptance, they are also factors to retain customers to use e-banking system, boost organizational reputation, perceived risk and trust. Compare to the current study, Ayo et al. (2010) only focus on review and evaluation of e-banking from the perspective of an existing model (TAM). However, the current study focuses on satisfaction with e-payment system and the likely factors that determines it.

In his own study, Khan (2010) examined the dimensions of ATM (automated teller machine) service quality and its effect on customer satisfaction. Data for this study was gathered through a questionnaire administered to a sample of 500 customers of multinational and national banks. Through multiple regression analysis, the findings demonstrate that convenience, efficient operation, security and privacy, reliability and responsiveness are significant dimensions of ATM service quality. Similarly, ATM ser-

vice quality contributes significantly to customer satisfaction. The study is a significant contribution to the quality management literature because limited empirical studies focusing this aspect of the banking sector in Pakistan are available. The current study focuses e-payment system which also related to banking. However, none of the factors considered influencing e-payment satisfaction was captured in Khan study.

Saha et al. (2010) investigated citizen satisfaction as a determinant of e-government success and also explore the relationship of satisfaction with e-government service quality. Analysis of data reveals that 43% of the variance among the factors of e-service quality, and usage is explained by citizen satisfaction. E-service quality was found to be related with citizen satisfaction. Similarly, compare to privacy in determining e-service quality, efficiency, responsiveness and web assistance was found to be of more importance.

Use was reported to be significantly correlated with citizen satisfaction. The findings contribute to the understanding of the major factors that influence citizens' needs and level of satisfaction with the tax services and help improve the service delivery process. However, none of the variables focused in the study relates to security, perceived speed, and ease of payment, convenience, anonymity, and traceability which are the target in this study. The suggestion for further exploration of other quality dimensions such as system and information quality prompts this current study.

Chen, Chen and Chen (2009) in an integrated model explain individual's continuous use of SSTs concepts of technology readiness (TR), technology acceptance model (TAM), and theory of planned behaviour (TPB). Data for the study was collected from 481SST users. Through structural equation modelling, the study reveals that consumers' satisfaction significantly impacts continuance intention, while the perceived usefulness, perceived ease of use, subjective norm (SN), and perceived behavioural control (PBC) simultaneously influence satisfaction. Other significant motivators of satisfaction reported are optimism and innovativeness.

Contrarily, discomfort and insecurity which are technology readiness inhibitors have significant negative influence on continuance intention towards adopting SST services. Different from the current study, the author focused on self-service technology while the current study focus on e-payment system and expert service technology. Similarly, the former study combined satisfaction with continuance intention while the current study focused only satisfaction.

Jung-Yu and Ching-Tsung (2008) explored factors affecting corporate customer satisfaction with e-banking (CCSEB) one of the variables in e-banking services success. A sample of 178 respondents was surveyed from Taiwan companies. The results demonstrate that factors such as environmental, organizational, and globalization significantly affect customer satisfaction with e-banking. Furthermore, the study reported existence of relationship between customer satisfaction and post-usage favourite behaviour. This study differs from the current study in terms of focus and variables. Similarly, it observed that research on e-payment is very limited compare to the e-banking. Hence, this study is an attempt to add to research and literature especially from the Nigeria context.

Extant review on information systems research has revealed many factors determining users' satisfaction with an information system. They include for instance, services quality, security, perceived speed, ease of payment, perceived benefits, actual use, attitude toward use, technical support, intention to use, experience, perceive ease of use, self-efficacy, system interactivity, etc.

This study only focuses on characteristics or factors peculiar and relevant to e-payment system including security, perceived speed, and ease of payment, convenience, anonymity, and traceability which most previously related researches have ignore. In addition, literature has also reveals that most of the related studies on e-payment system adoption or satisfaction were conducted in advanced nations while very limited ones are conducted in the developing nations. Conducting this research is considered important in view of the fact that it is an addition to literature from the perspective of a developing nation. The study therefore attempts to examine whether the six identified characteristics are capable of predicting users' satisfaction with the e-payment system at the University of Nigeria.

As mentioned before, the University of Ilorin started using this system of payment in 2010 and up till now there has been limited or no study conducted to examine whether or not workers are satisfied with the new payment system. It is in the light of this that this study examined users' satisfaction with the e-payment system at the University of Ilorin, Nigeria. To achieve the objective of the study, the following research questions were developed.

1. What dimension of e-payment system users mostly satisfied?
2. What is the overall level of users' satisfaction with the e-payment system?
3. Does inter-correlation exit among the factors and users' satisfaction with e-payment system?
4. Which of the e-payment (characteristics) factors best predict users' satisfaction with e-payment system?
5. What is the joint contribution of each of the (characteristics) factors to users' satisfaction with e-payment system?

3 Methodology

A pure quantitative method using survey design was adopted for the study. The population comprised the academic and non-academic staff users of e-payment system at the University of Ilorin Nigeria. Currently, the total of academic and non- academic staff in this university stands at approximately 1600. A simple random sample technique was utilized to select 260 academic and non-academic staff from six faculties out of 12 faculties at the University of Ilorin. This sample selection was done during a gathering that involved all the staff in the university (academic and non-academic). Coincidentally, the selected 260 staff were from only six faculties. This represents the sample for the study.

3.1 Instrument

A modified questionnaire was used for the collection of data. Items in the questionnaire were adapted from questionnaires or scales used in previous relevant studies (e.g. Adewoye and Oni, 2010; Adeoti and Osotimehin, 2012; Adewoye, 2013, Tella and Olasina, 2014; Abrazhevich, nd*). The modification was done by rewording some of the contents to suit the purpose of this study. For instance, security item - *most secure payments: paying by invoice* MODIFIED to *e-payment system is the most secure* payment: paying by invoice; while anonymity item - *never refrain from paying because of the fact of revealing identity when paying* MODIFIED to *I will continue using e-payment system because of identity revelation during payment.* Table 1 provides the detail of how source of the items.

The questionnaire was divided into two sections. Section A requires respondents' socio-demographic data while section B contained the items. This section was sub-divided into parts (B1-B7) based on the variables/factors focus in the study. Table 1 shows the relevant studies where items in the sub-parts were adapted. The sub-part of the questionnaire featured items on each variable as stated above.

Each sub-part featured four items. This gives a total of 28 items in all. The response format follow a four point's Likert type scale ranging from Strongly Agree (4) to Strongly Disagree (1). The mid-point was not included to overcome 'I don't know' and indifferent choice which may distort the results of the study (Hussein et al., 2007). See the appendix for the details on items.

3.2 Validity and Reliability

Since the items were adapted from previous questionnaires used in related studies, it is believed that such might have undergone validation process. This in part justifies the validity of the questionnaire. However, after development, the questionnaire was given to two experts who are knowledgeable in IS research for scrutiny. The questionnaire was modified and reworded based on the suggestions by the experts. To determine the reliability of the questionnaire, it was administered on 20 respondents who did not eventu-

Table 1: Specification of Studies where Items were adapted and modified

Serial Number	Factors/Variables	Relevant Studies where adapted
B1.	Security	Adewoye, 2013; Adewoye & Oni, 2010
B2.	Perceived speed	Adewoye & Oni, 2010; Adeoti & Osotimehin, 2010; Tella and Olasina, 2014
B3.	Ease of payment	Tella & Olasina, 2014
B4.	Convenience	Adewoye, 2013
B5.	Anonymity	Adewoye, 2013; Abrazhavich nd*
B6.	Traceability	Abrazhavich nd*
B7.	Users' satisfaction (dependent variable)	Tella & Olasina, 2014

ally participate in the study. A test-retest reliability method of three weeks interval was embarked upon. Data collected was subjected to Cronbach Alpha and the reliability coefficient returned an $\alpha = 0.92$ for the overall questionnaire while the reliability coefficient of the sub-scale returned the following: Security r = 0.88; Perceived speed r = 0.79; Ease of payment r = 0.82; Convenience r = 0.76; Anonymity r =0.83; Traceability r = 0.75 and the Users' satisfaction section 0.89.

3.3 Procedure of Administration

The selected 260 staff were followed up to their faculty. These respondents were administered the instrument in their respective faculties. The questionnaire administration covered six days (a day for each faculty). Informed consent of the respondents was sought and they were all given voluntary opportunity to participate in the study. Responses were collected immediately except on special arrangement with the researcher. A total of 260 copies of questionnaire were administered and all were returned completely filled and good for data analysis. This absolute return rate was achieved because a day was earmarked to capture data in each faculty, cooperation of respondents and through proper monitoring; no attrition was recorded.

3.4 Data Analysis

Collected data was analysed using descriptive statistics including mean, percentages and frequency count, and some inferential statistics like multiple correlation, Anova and multiple regressions were also performed to determine which of the factors best determine users' satisfaction with the e-payment system. Percentages and frequency count were used to be able to determine the distribution of respondents and overall satisfaction of respondents with e-payment system. Descriptive statistics was used to identify the dimension of e-payment users mostly satisfied. Research question 1 was answered using descriptive statistics, percentage and frequency and multiple correlation. Research question 2, and 3 were answered using Anova and multiple regression and beta weight while research question 4 was answered by using frequency and mean and research question 5 was answered using percentage and frequency. The characteristics of the sample and other results are hereby presented.

4 Results

The demographic information of respondents who took part in the study in Table 2 reveals that 146 (56.2%) were male while 114 (43.8%) were female. Moreover, the demographic information on the respondents' age reveals that 55 respondents representing (21.2%) have their age fall within 21-30 years of age; 55 respondents (21.2%) have their age fall within the age group of 31-40 years. A total of 60 respondents (23.1%) have their age fall within the age group of 41-50 years and 70 respondents (26.9%) have their age fall within 51-60 years while 20 respondents (4%) have their age fall within 61 years and above. On the respondents years of experience, the results indicate that majority of the respondents 110 (42.3%) have between 0-10 years of working experience.

This is followed by 90 respondents (34.6%) who have their years of working experience between 11 – 20 years; 35 respondents representing (13.5%) have 21-25 years of working experience and 25 respondents (9.6%) have more than 31 years and above years of experience. Interesting demographic information is the respondents' educational qualification. The results on this show that 100 respondents hold ordinary national diploma (OND) and National certificate in education (NCE) representing (38.5%). Respondents who hold Bachelor degree are 60 (23.1%) while those who hold Masters' degree and Ph.D. each amounted to 50 (19.2%) respectively.

Responses to all the dimensions provided were obtained to answer research question 1. The results confirm all the e-payment factors/characteristics are good indicators of users' satisfaction with the e-payment system. The results reveal that the mean value of each factor is significant thereby indicating that they all have the potentials and capacity to determine users' satisfaction with e-payment. From the results, it can be infer that staff are generally satisfied with the speed of the e-payment system (Mean = 3.84). The results thus answer the research question by revealing perceived speed as the e-payment characteristics users mostly satisfied with, followed by system security, traceability, and convenience. This answers research question one in this study.

Staff were asked to show their level of satisfaction with e-payment system on a four point ratings. Table 4 presents the results which reveal that staff were generally satisfied with the e-payment system at the University of Ilorin, Nigeria. Overall, more than half the population of the respondents (93.5%) were adequately satisfied, satisfied and moderately (the highest level of satisfaction), while on the other hand, only (6.5%) of the respondents were less satisfied and dissatisfied. This provides answer to research question two in this study.

Table 5 shows the descriptive statistics for the constructs and for the individual questionnaire items, respectively. The constructs shows high agreement with the items within Perceived speed (mean = 3.78), Perceived security (mean = 3.26), Anonymity (mean = 3.12), traceability (2.78), Perceived ease of payment EOP (mean = 2.61), and convenience (mean = 2.50). Table 2 also shows the inter-correlation between all the e-payment factors (i.e. characteristics) and e-payment users' satisfaction. The data suggests the absolute value greater than 0.05 which

Table 2: Demographic Information of the Respondents (N = 260)

Demographics	Frequency	Percentage %
Gender		
Male	146	56.2
Female	114	43.8
Total	**260**	**100.0**
Age		
21- 30 years	55	21.2
31- 40 years	55	21.2
41- 50 years	60	23.1
51 -60 years	70	26.9
61 years +	20	7.8
Total	**260**	**100.0**
Working Experience		
0- 10 years	110	42.3
11-20 years	90	34.6
21-30 years	35	13.5
31 years +	25	9.6
Total	**260**	**100.0**
Respondents Types		
Academic staff	**158**	60.8
Non-academic staff	**102**	39.2
Total	**260**	**100.0**
Educational Level		
OND/NCE	100	38.5
Bachelor Degree	60	23.1
Master's Degree	50	19.2
PhD	50	19.2
Total	**260**	**100.0**

Table 3: Dimension of User satisfaction with e-payment (N = 260)

Dimensions	Number of respondents	Mean
Perceived security	260	3.45
Perceived speed	260	3.84
Ease of payment	260	2.74
Convenance	260	2.40
Anonymity	260	3.38
Traceability		

Table 4: Overall Level of E-payment Satisfaction (N =260)

Level of satisfaction	Number of Responses	Percentage
Adequately Satisfied	168	64.6
Satisfied	48	18.5
Moderately Satisfied	27	10.4
Less Satisfied	12	4.6
Dissatisfied	5	1.9
Total	260	100

Table 5: Descriptive statistics and Pearson correlation coefficient among dimension of satisfaction with E-payment System (N = 260)

Dimension	Mean	Std. Dev.	EPS	Per. Sec	Per. Speed	EOP	Conv.	Anonymity	Traceability
E-payment system	3.99	2.11	1.000						
Perceived Security	3.26	1.09	.544**	1.000					
Perceived Speed	3.78	1.27	.744**	.411	1.000				
Ease of payment	2.61	1.05	.442**	.569	.644	1.000			
Convenience	2.50	1.80	.533**	.599	.467	.787	1.000		
Anonymity	3.12	1.20	.478**	.588	.446	.557	.608	1.000	
Traceability	2.78	1.22	.380**	.137	.422	.544	.465	.129	1.000

is considered positive. This indicates that there is a significant correlation between the three of the e-payment factors (Per. speed r = 0.744; Per. sec r = 0.544 and Convenience r = 0.533).

The correlation 'r' of these three factors are greater than = 0.5 while the correlation of the other three (Anonymity r = 0.478, EOP r = 0.442, and Traceability r = 0.380) are partially weak. In terms of the inter-correlation (e.g. Per. sec. vs traceability r = 0.137 and anonymity vs traceability, r =0.129) reported weak correlation, where P > 0.05. This provides answer to the third research question on this study thereby indicating that significant correlation exist between the entire e-payment factors and e-payment satisfaction.

Table 6 suggests that the R square = 0.71, R value adjusted = 0.55, and the multiple correlation of all the e-payment factors yielded an R = .046. In the second step, the analysis of variance performed on multiple regression yielded an F-ratio value of 12.29. This was significant at 0.05 levels. The R Square results explained 71% variance of the dependent variable by independent variables. This suggests that all the six factors jointly determine users' satisfaction with the e-payment system. This provides answer to the fourth research question in this study.

Table 7 suggests that each of the independent variables (factors) made a significant prediction of e-payment system satisfaction. Arranging the values in order of magnitude of the prediction/contribution to e-payment users' satisfaction, perceived speed made the most significant prediction/contribution with (Beta = 0. 14641, t = 4.211). The next predicting value or contribution was exerted by perceived security (Beta = 0.14863, t = 3.385. This is followed by anonymity (Beta = 0.17211, t = 3.235). The other factors made a significant prediction/contribution in the following order: convenience (Beta 0.17374, t = 3.113); and traceability (Beta = 0.15518; t = 3.111). This suggests that all the factors contribute significantly to users' satisfaction with e-payment system; thereby provides answer to the fifth research question in this study.

5 Discussion of Findings

So far the results have shown that a greater percentage of the respondents (93.5%) were adequately satisfied, satisfied and moderately satisfied with the e-payment system thereby provide answer to the first research question in the study. Perceived speed was revealed as the characteristics users mostly satisfied with, followed by system security,

Table 6: Multiple Regression on Dimension of Users' Satisfaction with E-payment System (N = 260)

Multiple R	.4581			
R Square	.7158			
Adjusted R. Square	.5449			
Standard Error	.1540			
Analysis of Variance				
	Df	**Sums of Square**	**Mean Square**	**F**
Regression	5	7 223. 828	36119.14	12 .29
Residual	255	11.521	2937.86	
Total	260			

*Table 7: Co-efficient of the Prediction (N =260). **Significant at 0.05.*

Dimensions/variables	B	SE.B	Beta	t.	Sig. T
Perceived Security	.11895	.05114	.14863	3.385	S**
Perceived Speed	.01107	.05439	.14641	4.211	S**
Ease of payment	.03972	.05909	.14968	3.007	S**
Convenience	.04789	.06617	.17374	3.113	S**
Anonymity	.01469	.06453	.17211	3.235	S**
Traceability	.01445	.06842	.15518	3.111	S**
Constant (Users' satisfaction)	31.20589	3.18019		5.342	000

traceability, and convenience. This provides answer to the second research question. Moreover, the results demonstrated significant correlation among all the factors (perceived speed, security, anonymity, traceability, perceived ease of payment, and convenience) and e-payment users' satisfaction. This hereby provides answer to the third research question. The results also suggest that all six factors jointly determine or predict users' satisfaction with the e-payment system. This also provides answer to the fourth research question. Finally, all the factors significantly contribute to users' satisfaction with e-payment system thereby provides answer to the fifth research questions in the study.

This result corroborates the earlier report by (Adewoye and Oni, 2010) who indicated that perceived ease of use is one of the antecedents of e-banking acceptance, and that there are other factors attracting customers to use e-banking system such as organizational reputation, perceived risk and trust. Similar to Adewoye and Oni's report, aside of perceive ease of payment, other factors indicated motivate respondents satisfaction with e-payment system are perceived speed, security, anonymity, traceability, and convenience.

A related finding was reported by (Saha et al., 2010) who reported many factor as correlates of e-government success such as efficiency, actual usage and discrepancy. However, none of these factors is relevant to the one identified as correlated to e-payment system in the present study. This variation may be due to the difference in the information system focused by each of the study. While the current study focused on e-payment system the former focused on e-government. It is also noted that the current study sought to determine satisfaction with the e-payment system while the former attempt to determine the e-government success.

A similar report was put forward by Chen, et al, (2009). According to these authors, consumers' satisfaction influenced continuance intention, while the perceived usefulness, subjective norm (SN), perceived ease of use, and perceived behavioural control (PBC) simultaneously influence satisfaction. Similarly optimism and innovativeness were reported as the significant motivators of satisfaction. It could be seen from this finding that factors similar to the ones identified in the current study were reported such as perceived ease of use. The fact that perceived ease of use is a common factor identified by many studies, indicate that it is a strong factor influencing or determining information system satisfaction.

Generally, it is clear from this discussion that many previous studies confirm perceived ease of payment factor which is one of the factors indicated in this study as determining satisfaction. This is not to say that other factors are not important. Therefore, future research should reconsider including the remaining factors in the future relevant

studies to further determine their relevance in determining e-payment satisfaction and satisfaction with other information systems.

6 Conclusion

The results in this study have revealed that respondents are satisfied with the e-payment system for the payment of salaries at the University of Ilorin. Therefore, the vacuum of not knowing whether or not respondents are satisfied with the e-payment system introduced by the university two years ago has now being filled. Furthermore, the study has successfully confirms the six factors identified in the study as good determinant of e-payment system. This also has bridged the gap of unknown factors that have the likelihood of determining e-payment system in the mandatory environment. Similarly, this study has been able to add to the existing limited research and study on e-payment system in the Nigeria context.

Since the results in this study has demonstrated that some respondents are less satisfied with the e-payment system, it is recommended that there should be improvement on the e-payment system at the University so that all the stakeholders could be satisfied.

Traceability made the lowest significant contribution to the prediction of e-payment satisfaction. Meaning that, currently, users find it difficult to trace errors arising from using e-payment system. In the light of this, it is suggested that traceability should be more facilitated and the concerned stakeholders – the university and the banks involved should see to it that errors are effectively trace to assist e-payment users anytime they encounter errors in transaction or any other related challenges.

Considering the limitations of the study and future research direction, the sample was restricted mainly to academic environment, and therefore, most of the respondents were highly educated and have experienced regarding e-payment. In addition, results of the study might also be biased based on the sample selected only from academic environment. Therefore, involving more diverse e-payment users, such as older, less educated, and less experienced in another context different from academic environment, may enable the construction and validation of more generalized model.

Some characteristics of the system service, such as control which can also influence e-payment system success, were excluded in the study. Therefore, future research should consider including additional applicable factors such as system control for better understanding of e-payment system satisfaction. The measures for the construct of e-payment system satisfaction used in this study are self-reported. In this regards, future research can develop more objective and accurate measures for e-payment system satisfaction.

The analysis and classification of the publications were based on the parallel assessments of very few researchers. A parallel analysis by more researchers could have increased the results' validity.

The limited respondents used as sample of the study denied the opportunity of generalising the results in this study to other universities in Nigeria and to universities in Africa and other developing countries. However, the results in this study have laid the foundation on which other relevant research can improved upon.

7 Practical Implications

The study's findings make it possible for the information system users and the adoption organization to understand the e-payment satisfaction factors with which to improve the system and to prioritize their investments accordingly. Empirical revelation of factors that lead to user satisfaction with e-payment system will advance the development of theories in this area and present a basis for further research in this field.

Literature

Abrazhevich, D. nd*. A survey of user attitudes towards electronic payment systems. A Research Paper, IPO, Center for User-System Interaction, Technical University of Eindhoven, the Netherlands.

Adeoti, O., & Osotimehin, K. (2012). Adoption of Point of Sale Terminals in Nigeria: Assessment of Consumers' Level of Satisfaction. *Research Journal of Finance and Accounting*, 3(1), 1-6.

Adewoye, J.O. (2013). Impact of Mobile Banking on Service Delivery in the Nigerian Commercial Banks. *International Review of Management and Business Research*, 2(2), 333-344.

Alao, A.A., & Sorinola, O.O. (2015). Cashless policy and customers' satisfaction: A study of commercial banks in Ogun State, Nigeria. *Research Journal of Finance and Accounting,* 6 (2), 37-47.

Anderson, M. (1998). The electronic check architecture. Financial Services Technology Consortium.

Athanassopoulos, A. (2000). Customer satisfaction cues to support market segmentation and explain switching behaviour. *Journal of Business Research,* 47(3), 191-207.

Ayo, C. K., Adewoye J. O, & Oni A. A. (2010). The state of e-Banking implementation in Nigeria: A post-consolidation review. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS),* 1(1), 37-45

Bailey, J., & Pearson, W. (1983). Development of a tool for measuring and analyzing computer user satisfaction. *Management Science,* 29 (5), 530-545, http://dx.doi.org/10.1287/mnsc.29.5.530

Beerli, A., Martin, J.D., & Quintana, A. (2004). A model

of customer loyalty in the retail banking market. *European Journal of Marketing,* 38(1/2), 253-75, http://dx.doi.org/10.1108/03090560410511221

Cavarretta, F., & de Silva, J. (1995). *Market overview of the payments mechanisms for the Internet Commerce. Global Journal of International Business Research,* 2(2), 21-30.

Chavosh, A. Halimi, A. B., & Espahbodi, S. (2011). Comparing the Satisfaction with the Banks E-Payment Services between Degree Holder and Non-Degree Holder Customers in Penang-Malaysia. *International Journal of e-Education, e-Business, e-Management and e-Learning,* 1(2), 132-138, http://dx.doi.org/10.7763/IJEEEE.2011.V1.21

Chen, S.C, Chen, H.H., & Chen, M.F. (2009). Determinants of satisfaction and continuance intention towards self-service technologies. *Industrial Management & Data Systems,* 109(9), 1248 – 1263, http://dx.doi.org/10.1108/02635570911002306

DeLone, W.H., & McLean, E.R. (2003). The DeLone and McLean Model of information systems success: A ten-year update. *Journal of Management Information Systems,* 19(4), 9-30.

Doll, W. J., & Torkzadeh, G. (1988). The measurement of end-user computing satisfaction. *MIS Quarterly,* 12(2), 259-274, http://dx.doi.org/10.2307/248851

Hamid, N.R.A, & Cheng, A.Y. (2013). A risk perception analysis on the use of electronic payment systems by young adult. *WSEAS Transactions on Information Science and applications*, 10(1), 26-35.

Hussein, R., Abdu-Karim, N. S., Mohamed, N., & Ahlan, A. R. (2007). The influence of organizational factors on information system success in e-government agencies in Malaysia. *Electronic Journal of Information Systems in Developing Countries -EJISDC*, 29(1), 1–17. Retrieved from http://www.ejisdc.org/ojs2/index.php/ejisdc/article/view/234/194

Irani, Z., Sivarajah, U., Molnar, A., & Lee, H. (2014). A User Satisfaction Study of the London Congestion Charging e-Service. A Paper presented at the Twentieth Americas Conference on Information Systems, Savannah, Georgia, 7-10 August.

Ives, B., Olson, M.H., & Baraudi, J.J. (1983). The measurement of user information satisfaction. *Communications of the ACM,* 26 (10), 785-793, http://dx.doi.org/10.1145/358413.358430

Jung-Yu, L. & Ching-Tsung, L. (2008). What factors drive customer satisfaction with e-banking services? Pacific Asian Conference on Information System, *PACIS Proceedings,* Paper 84.

Khan, M.A. (2010). An empirical study of Automated Teller Machine service quality and customer satisfaction in Pakistani banks. *European Journal of Social Sciences,* 13(3), 333-344.

Komal S., S. (2009). Impact of ATM on customer satisfaction: A comparative study of SBI, ICICI & HDFC bank. *Business Intelligence Journal*, 2(2), 276-87. *Retrieved from http://www.saycocorporativo.com/saycoUK/BIJ/journal/Vol2No2/article2.pdf*

Leblanc, G. (1990). Customer motivation: use and non-use of automated banking. *International Journal of Bank Marketing,* 8(4), 36-40, http://dx.doi.org/10.1108/02652329010000901

Mobarek, A. (2007). E-Banking practices and customer satisfaction – A case study in Botswana. Paper Presented at the 20th Australasian Finance & Banking Conference, http://dx.doi.org/10.2139/ssrn.1011112

Molla, A., & Licker, P.S. (2001). E-Commerce Systems Success: An attempt to extend and respecify the DeLone and MacLean Model of IS success. *Journal of Electronic Commerce Research,* 2(4), 131-141.

Moutinho, L. (1992). Customer satisfaction measurements: prolonged satisfaction with ATMs. *International Journal of Bank Marketing,* 10 (7), 30-7, http://dx.doi.org/10.1108/02652329210021131

Moutinho, L., & Brownlie, D.T. (1989). Customer satisfaction with bank services: a multidimensional space analysis. *International Journal of Bank Marketing,* 7(5), 23-7, http://dx.doi.org/10.1108/02652328910131926

Murdock, G. W., & Franz, L. (1983). Habit and perceived risk as factors in the resistance to use of ATMs. *Journal of Retail Banking*, 5(2), 20-29.

Olanipekun, W. D, Brimah, A.N. & Ajagbe, S.T. (2013). Role of electronic banking in enhancing human resource performance and customer satisfaction: Evidence from Guaranty Trust Bank PLC, Nigeria. *International Journal of Business and Behavioral Sciences,* 3(4), 36-44.

Ong, C.S., Lai, J.Y., & Wang, Y.S. (2004). Factors affecting engineers' acceptance of asynchronous e-learning systems in high-tech companies. *Information & Management,* 41 (6): 795–804, http://dx.doi.org/10.1016/j.im.2003.08.012

Saha, P., Atanu N., & Salehi-Sangari, E. (2010). Success of Government e-service delivery: Does satisfaction matter? *Lecture Notes in Computer Science,* 62 (28), 204-215, http://dx.doi.org/10.1007/978-3-642-14799-9_18

Simmers, C.A. & Anandarajan, M. (2001). User satisfaction in the internet-anchored workplace: an exploratory study. *Journal of Information Technology Theory and Application,* 3 (5), 39-53.

Stemper, R.G. 1990.*The guide to successful consumer banking strategy,* Chichester and Toronto: John Wiley & Sons.

Tan, M. (2004). *E-payment: The digital exchange*. Singapore: Singapore University Press.

Tella, A. (2012). Determinants of E-Payment Systems Success: A User's Satisfaction Perspective. *International Journal of E-Adoption,* 4(3):15-38, http://dx.doi.org/10.4018/jea.2012070102

Tella, A., & Olasina, G. (2014). Predicting users' continuance intention toward e-payment System: An extension of the technology acceptance model. *International Journal of Information Systems & Social Change (IJISSC),* 5(1), 47-67, http://dx.doi.org/10.4018/ijissc.2014010104

Tijani, J. A., & Ilugbemi, A. O. (2015). Electronic payment channels in the Nigeria banking sector and its impacts on national development. *Asian Economic and Financial Review*, 5(3), 521-531.

Wan, W. W. N., Luk, C. L., & Chow, C. W.C. (2005). Customers' adoption of banking channels in Hong Kong. *International Journal of Bank Marketing,* 23(3), 255-272.

Wood, J. (2008). The effect of buyers' perceptions of environmental uncertainty of satisfaction and loyalty. *Journal of Marketing Theory and Practice,* 16 (4), 309-20.

Adeyinka TELLA is a senior lecturer in the Department of Library and Information Science, Faculty of Communication and Information Sciences, University of Ilorin, Nigeria. Tella is a commonwealth scholar who finished his PhD in September 2009 from the Department of Library and Information Studies; University of Botswana. In 2007, he was awarded small grant for thesis writing for the PhD students' category by the Council for the Development of Social Science Research in Africa (CODESRIA). He has written and published articles mostly in International reputable refereed journals together with chapters in books. He is one of the contributors to an information science reference "Cases on Successful E-learning Practices in the Developed and Developing World: Methods for the Global Information Economy". Tella has edited two books: 'Library and Information Science in Developing Countries: Contemporary Issues' published in 2013 and 'Social Media Strategies for Dynamic Library Service Development' published in 2015. Currently, he is the Associate Editor, International Journal of Library and Information Science, and Editor-in-Chief- International Journal of Information Processing and Communication (IJIPC). His research areas include e-learning, information literacy, information system management and evaluation, information communication technology, psychology of information, etc.

Abdulmumin ISAH is a lecturer in the Department of Library and Information Science, University of Ilorin, Nigeria. He has previously worked as Graduate Research Assistant on World Bank Research Project at the University of Lagos, Nigeria and College Librarian at the Nigerian Television College, Jos. He is a member of professional associations such as Nigerian Library Association (NLA) and the Association of Nigeria Authors (ANA).

Napovedni dejavniki zadovoljstva strank z e-plačilnega sistema: študija primera štaba na Univerzi v Ilorin-u, Nigerija

Ozadje in namen: Številne organizacije uporabljajo e-plačilne sisteme; njihova učinkovitost pa je različna, še posebej, kadar so uporabljeni v različnih okoljih. Univerza v Ilorinu kot izobraževalna organizacija je začela uporabljati e-plačilni sistem v letu 2010 in do zdaj ni bila narejena nobena študija, ki bi preučila zadovoljstvo njegovih uporabnikov. Namen študije je proučiti zadovoljstvo uporabnikov z e-plačilnega sistema na Univerzi v Ilorinu.
Zasnova / Metodologija. Vzorec 260 akademskih in ne-akademskega delavcev smo izbrali med zaposlenimi šestih fakultet univerze. Podatki so bili zbrani s uporabo vprašalnika, ki je bil razvit prav v ta namen. Usmeritev študije je bila postavljena s petimi raziskovalnimi vprašanji.
Rezultati: Anketiranci so v 93,5% ustrezno zadovoljni, zadovoljni in zmerno zadovoljni, medtem ko je le (6,5%) vprašanih so bili manj zadovoljni in nezadovoljni. Uporabniki so bili najbolj zadovoljni z zaznano hitrostjo, sledijo varnost sistema, sledljivost in udobje. Obstaja visoka korelacija med celotno značilnostmi e-plačil (zaznava hitrost, varnost, anonimnost, sledljivost, zaznana enostavnost plačila, in priročnost); vseh šest dejavnikov skupaj napoveduje zadovoljstva uporabnikov sistema. Največ k zadovoljstvu uporabnikov prispeva zaznana hitrost.
Zaključek: Študija je ugotovila, da je velik odstotek anketirancev (93,5%) zadovoljnih z e-plačilnim sistemom. Mogoče pa ga je še izboljšati tako, in s tem še povečati delež zadovoljnih.

Ključne besede: *zadovoljstvo uporabnikov, e-poslovanje, elektronski plačilni sistem (EPS), plača, univerza*

APPENDIX

E-PAYMENT SATISFACTION QUESTIONNAIRE

Instruction

Dear respondents,

This questionnaire is designed to learn about your satisfaction with the use of E-payment system for the payment of workers' salary in this university and other uses. It is purely for research exercise. Please answer each statement below by ticking the option that best reflects your degree of agreement or disagreement with that statement. There is no right or wrong answer. Your response will be treated with strict confidence. Thank you.

Bio-Data Information

Gender: Male Female

Age: 21 – 30 years 31 – 40 years
41 – 50 years 51 – 60 years
61 years +

Working Experience: 0-10 years 11-20 years
21 – 30 years 31 years +

Staff: Academic Non -Academic

Educational Level: OND/NCE ☐ Bachelor Degree ☐

Master's Degree ☐ Ph.D. ☐

SECTION B: E-payment Characteristics/Factors

S/N	B1 – Perceived Security	SA	A	NS	D	SD
1	E-payment system is the most secure payments: paying by invoice					
2	With e-payment system, there is the fear that hacker can threats bank website					
3	E-payment provides great security for salary payment/other transaction					
4	The privacy and integrity of my personal information can be compromised					

Note: SA – Strongly Agree, A = Agree, NS = Not Sure, D = Disagree, SD = Strongly Disagree

S/N	B2 - Perceived Speed of E-payment	SA	A	NS	D	SD
1	E-payment facilitates timely workers' salary payment					
2	Receiving monthly salary is now very fast.					
3	The speedy alert that salary has been paid is fantastic					
4	Overall, I cherish receiving alert for early salary payment					

S/N	B3 - Perceived Ease Payment	SA	A	NS	D	SD
1	E-payment makes salary payment easier than before					
2	E-payment system has reduced errors in the payment of workers' salary to a barest minimum.					
3	E-payment is rigid and inflexible					
4	Overall, e-payment system is an easy means of salary payment					

S/N	B4 : Convenience	SA	A	NS	D	SD
1	Using e-payment system is stress free					
2	I don't need to appear in the bank physically before instructing transfer					
3	It provides convenience of access as it is available 24 X 7					
4	E-payment effortless accessibility for differently abled people					

S/N	B5– Anonymity	SA	A	NS	D	SD
1	I will continue using e-payment because of identity revelation during payment.					
2	Would prefer that their purchases are registered to avoid disputes					
3	Need of registration of purchases for a better service					
4	*There is concerned* that vendors can register their purchases					

S/N	B6 - Traceability	SA	A	NS	D	SD
1	Would not like to reveal information about source of income					
2	E-payment system lacks standard format for remittance					
3	Tracing errors could be very complex with e-payment					
4	There is no way to verify that I am transacting with whom I intend to					

S/N	B7 - Satisfaction with E-payment System	SA	A	NS	D	SD
1	The e-payment system is wonderful					
2	The current e-payment system is stimulating					
3	I am satisfied with this system because it's free from error					
4	Overall, I am extremely satisfied receiving salary through e-payment system					

Please, indicate your level of satisfaction with the e-payment system by ticking appropriate option in the box below.

Level of satisfaction	Tick as appropriate
Adequately Satisfied Satisfied Moderately Satisfied Less Satisfied Dissatisfied	

DOI: 10.1515/orga-2015-0023

Employability of Nursing Care Graduates

Barbara Donik[1], Majda Pajnkihar[1], Mojca Bernik[2]

[1]University of Maribor, Faculty of Health Sciences, Žitna 15, 2000 Maribor, Slovenia
barbara.donik@um.si, majda.pajnkihar@um.si

[2]University of Maribor, Faculty of Organizational Sciences, Kidričeva cesta 55a, 4000 Kranj, Slovenia
mojca.bernik@fov.uni-mb.si

Starting points: In Slovenia, the higher education institution for nursing started exploring employability opportunities in nursing care in connection with the achievement of competencies from students' and employers' point of view. This article highlights the importance of monitoring nursing graduates' employability. Its aim is to examine the employability of nursing care graduates based on the self-evaluation of competences obtained during the last study year and to establish a link between the self-evaluation of competences and students' academic performance.
Methodology: A questionnaire was distributed to full and part time nursing care students attending the last study year at five different healthcare/health sciences faculties in Slovenia and to employers (healthcare institutions) where the majority of nursing care graduates finds employment. We examined the level of competence achieved by nursing students and the level of competences required by employers. The sample included a total of 485 students. 194 surveys were returned, which represent a 40 percent response. We used Kolmogorov-Smirnov test for each individual joined competence. Further, we compared employability skills of students and employers with Mann-Whitney and Wilcox rank-sum test. For correlation between two variables we used Spearman correlation analysis.
Results: The Mann-Whitney and Wilkson Rank test show that employers generally assess competences with a higher average grade in comparison to students and these differences are statistically significant. By applying the Spearman correlation analysis, we established that a statistically significant weak correlation may be observed between the "average grade" and "competences" variables.
Discussion and conclusion: Our findings show that a continuous monitoring of general and subject-specific competences gained by students, along with a periodic verification of competences demanded by employers, is necessary. It is very important to monitor the requirements of the labour market in terms of ongoing communication with employers who can best estimate special knowledge needs.

Keywords: *employability, nursing care graduates, competences, labour market*

1 Introduction

In the past, the employability of nursing care professionals in Slovenia was considered high and the labour market in nursing also showed a relatively high demand. Nowadays, there are several reasons for concern, as the labour market in the field of nursing in Slovenia is slowly filling up. Statistical data of the Employment Service of Slovenia (2013) show that there were 821 job offered in nursing care in 2011 (after 2012 the Employment Service of Slovenia gathered no more data about job offers by the law). Today's data show an increased unemployment in nursing. In August 2014, there were 171 registered unemployed graduated students in the field nursing care (European Federation of Nurses associations Workforce Commite, 2014).

This shows there are relatively few employment opportunities in the field of nursing and healthcare in Slovenia, although the demand in practice is evident. Our purpose is to find out, what the higher institutions can do to increase the employability of nursing care graduates. Higher education institutions can look into monitoring the employability of nursing care graduates from two perspectives, i.e. higher education institutions may offer enrolment places to candidates on the basis of demand and interests or follow

Received: June 9, 2015; revised: August 28, 2015; accepted: October 21, 2015

the situation on the labour market in the field of nursing care and offer enrolment places on the basis of this factor.

Marjetič and Lesjak (2013) claim that higher education institutions have recently not had to deal with the labour market, as all graduates were able to enter into fairly good employment. Therefore, there was no need to monitor the manner in which graduates were entering the labour market. Nowadays, however, we are dealing with the issue of monitoring graduates' employability and establishing mechanisms that would help them in the transition from education to employment. There is also a lack of unified mechanisms for verifying the effectiveness and validity of study programmes, with the exception of those used for checking the general and subject-specific competences gained during the study.

This raises a question of what happens to a graduate who is waiting for a job for more than six month after graduation. What is the aim of competences and skills achieved when graduates finish their study, since they are not able to apply them in practice doe to unemployment? Pavlin (2012) also states that Europe has been waiting for an analysis of empirical research among higher education graduates that would cover the topic of career success, employability and the evaluation of higher education for decades.

1.1 Employability and employment of nursing care graduates

Minten and Forsyth (2014) defined employability as "capability to move self-sufficiently within the labour market to realise potential through sustainable employment". Harvey (2001) quotes employment as the share of graduates who are employed full time in a specific time frame or as the number of graduates taking part in regular contract employment. Naturally, one should consider that more capable students find employment faster. The term employability can be explained as a transition to the work sphere. Yorke (2006) defines employability as a unit of achievements, skills, competences, understanding and personal characteristics that enable graduates to get employment so they are successful in their chosen occupation.

He also explains that employability is a graduate's skill to work in a work environment. Mason, Williams and Cranmer (2009) claim that the term employability refers to the so-called "work willingness" which means that a graduate possesses skills, knowledge and understanding that will contribute to organisations' goals in a creative manner. In the field of nursing care graduates' employability there is a need for adjusting norms and standards, and evaluating the quality of education. Qualification of graduates as an answer to the industry demands becomes a major aim for higher education institutions (Eurico, Silva and Valle, 2015). This may consequently lead to setting the necessary relations between key competences in the field of healthcare.

In Slovenia, there has been no mechanism that would systematically establish the needs for certain competences in the labour market yet. Furthermore, a measurement tool for measuring/monitoring graduates' employability has also not been developed yet. Estimates are available from the Employment Service of Slovenia, which is gathering data on employers' needs on the basis of occupation and not competences.

The assessment of competences obtained at the end of one's studies (Mogonea, 2015) and the assessment of competences required by employers could be one of the possibilities for measuring graduates' employability (Singh, Thambusamy and Ramly, 2014). Based on these findings, the following hypothesis was formulated:
RH1: On average nursing care students evaluate the level of achieved competencies higher than employers.

In their research, Kim, Lee, Eudey and Wong Dea (2014) find that the level of students' perceived competences was positively correlated with the level of their interaction with the preceptor in clinical settings which lead to reconcile the role between nursing students and employers. Fan, Wang, Chao, Jane and Hsu (2015) state that nursing students must acquire competences in a clinical environment to close the gap between education and practice, and that nursing education should be based on competences-based learning. This leads us to hypothesis two:
RH2: Level of required competences from the employers' side is on average higher with employers on secondary and tertiary level, as with employers on primary level of health care.

In order to enable the transition of nursing care graduates to the labour market, it is important that the education system and the labour market (clinical environment) are constantly adjusted and closely coordinated. This means that educational institutions should be in constant contact with employers who offer jobs to graduates and should know which competences are needed for certain work positions. On the other hand, employers should thoroughly define skills and competences required at certain positions. Higher education institutions are actually becoming economic institutions and get involved into competitive market relations (Pavleka, 2014). The level of nursing care graduate's employment is therefore important factor of their success. One of the main indicators of nursing care graduate's success is their average grade. Unfortunately, the relationship between traditional measures of academic success, such as average grade and postgraduation job performance is not well established (Codier and Odell, 2014). Based on these findings, the hypothesis three was formulated:
RH3: Nursing care students who evaluate their level of achieving competencies higher, will have a higher average grade.

1.2 Competences needed for graduates' transition to the labour market

It is important to establish which competences are needed for a successful entry into the labour market and better employability, and how these competences are related to a job profile (Allen and van der Velden, 2009).

In nursing, there are key competences, which define the proper field of nurses' work and are defined and categorised differently around the world. Competences may be combined into different categories (see Table 1).

European Federation of Nurses Associations (EFN) (2015) presents a document in which EFN prepared a guideline for the implementation of Article 31 of the Mutual Recognition of Professional Qualifications Directive 2005/36/EC, amended by Directive 2013/55/EU. This EFN Competency Framework is a guideline for the implementation of the changes in the directive into the national nursing curricula. This document is establishing a pathway that connects the competences with the related list of topics for the nurse education and potential learning outcomes (European Federation of Nurses Associations, 2015). We can predict that this is one of the first steps to unify professional competences on the European Union level.

The Nursing Council of Hong Kong (2012) defines key competences as result of education. Nurses who graduate from a bachelor's nursing care study programme, gain competences before entering the labour market and are therefore capable to provide safe, effective and ethical care to the public. Ravindra and Sheelam (2013) also state that individuals' capability or competence should be matched with organisational job requirements. Important job requirements in health care are leader's competences (Kvas et al., 2014). The European Federation of Nurses Associations Workforce Committee (EFN) (2014) and the Nurses and Midwives Association of Slovenia (2014) presented a document in which the EFN prepared the basis for defining key competences for new profiles of nurses. The matrix of key competences is not fully developed as it is expected that individual European Union countries will introduce their own competences and skills that were not planned by the EFN. It is therefore possible to predict that this is one of the first steps to unify professional competences at the European Union level.

Allen and van der Velden (2009) also state that the level of required competences may vary due to the demand in the labour market. In the field of nursing, one may also talk about differences between the healthcare level and required competences. Our study combines competences and eight employability skills, which were classified by Robinson (2000), European Commission (2011), Nurse of the Future Competency Committee (2010), Lee-Hsieh, Kao, Kuo and Tseng (2003), Hsu and Hsieh (2013) and Liptak (2010). These include performing professional nursing, innovativeness, team work, life-long learning, technological knowledge, work organisation, productivity and communication.

The purpose of this paper is to investigate the employability of nursing care graduates in connection with achieved and required competences. The aim of the research was to identify which competences are obtained by nursing care graduates during their study and what was their self-evaluation in the last study year, to investigate which competences are expected by employers and to establish the connection between competence self-evaluation and study efficiency.

2 Methods

2.1 Instrumentation

We prepared two surveys. A survey on competence evaluation, intended for nursing care students with 3 thematic sets (competencies evaluation with 49 competencies; factor affecting the employability with 10 factors; career development – the use of Schein career anchors) and demographic data: sex, age, study form and average grade was used. We also prepared a survey on expected competences and employability of nursing care graduates' intended for employers who employ nursing care graduates with 2 thematic sets (competencies evaluation with 49 competencies; factor affecting the employability with 10 factors and 6 items about publishing job vacancies) and demographic data: type of institution, region where the institute is located, and number of job vacancies publishing per year.

Both surveys were prepared based on analysis of the literature that describes competences in nursing care (Železnik et. al, 2008; TUNING, 2012; European Federation of Nurses associations Workforce Commite, 2014; Official Journal of the EU, 2013; Official Journal of the EU, 2006/394). To establish characteristics of variables we combined and classified 49 competencies from the survey, according to substantive area. We combined competencies to the so called 8 employability skills, also classified by Robinson (2000), European Commission (2011),

Nurse of the Future Competency Committee (2010), Lee-Hsieh, Kao, Kuo, & Tseng (2003), Hsu & Hsieh (2013), Liptak (2010), Official Journal of the EU (2013). We named them: performing professional nursing, innovativeness, team work, life-long learning, technology knowledge, work organization, productivity, and communication. For variable "performing professional nursing" we combined 7 competencies in connection with performing nursing care as well as to plan, organise and implement nursing care.

For variable "innovativeness" we combined 10 competencies in connection with competencies for independent decision making, performing nursing care based on evidence based practice and competencies for using crit-

Table 1: Categorisation of key competencies depending on different descriptions

Country/Association/ Author	Number of categories	Key competences categories	Reference
Directive 2005/36/EC amended by Directive 2013/55/EU European Union	8	• Use of theoretical and clinical knowledge in order to improve professional practice • Teamwork and Collaboration • Health promotion and empowerment of individuals, families and groups towards healthy lifestyles and self-care • Ability to act in emergency and crisis situations • Competence to independently advise, instruct and support individuals needing care • Competence to independently ensure the quality of nursing care and assess it; • Professional communication • Competence to analyse the quality of care in order to improve their own professional practice as general care nurses.	Official Journal of the EU (2013)
European Federation of Nurses (EFN) European Union	6+4 subgroups	• Culture, ethics and values • Health promotion and prevention, guidance and teaching • Decision-making • Communication and teamwork • Research, development and leadership • Nursing Care • Assessment and diagnosis • Care planning • Nursing intervention • Evaluation and quality assessment	European Federation of Nurses Associations (2015)
TUNING project / Europian Union	6	• Professional values and the role of a nurse • Nursing practice and clinical decisions • Nursing skills, interventions / activities to provide optimum nursing care • Knowledge and cognitive competencies • Communication and interpersonal skills (including the use of communication technology) • Leadership, management and teamwork competencies	TUNING (2012)
The Nursing & Midwifery Council (NMC) / England, Wales, Scotland and Northern Ireland	4	• Professional values • Communication and interpersonal skills • Nursing practice and decision making • Leadership, management and team working	The Nursing and Midwifery Council (NMC) (2010)

Table 1: Categorisation of key competencies depending on different descriptions (continued)

Massachusetts department of Higher Education / USA	7	• Patient-Centred Care • Leadership • Communication • Professionalism • Systems-Based Practice • Teamwork and Collaboration • Informatics and Technology • Safety • Quality Improvement • Evidence-Based Practice (EBP)	Nurse of the Future Competency Committee (2010)
Canadian Nurses Association / Canada	4	• Professional role, authority and responsibility • Patient evaluation and diagnostics • Management in the frame of a therapeutic programme; • Health promotion, illness and injury prevention	Canadian Nurses Association (2010)
Robinson / USA	3	• Basic Academic Skills • Higher – Order Thinking Skills • Personal Qualities	Robinson (2000)
Nursing Council of Hong Kong	5	• Professional, legal and ethical nursing care • Promotion of health and health care education • Management and guidance • Research and personal effectiveness • Professional development	Nursing Council of Hong Kong (2012)
Shafie Asmaak and Surina / Malaysia	9	• Personal Attributes • Team Work • Self-Management • Technology • Learning • Initiative and enterprise • Communication • Problem Solving • Team Work	Shafie Asmaak and Surina (2010)
Hsu and Hsieh / Taiwan	6	• Ethical practice and accountability • General clinical nursing skills • Lifelong learning • Clinical biomedical science • Caring • Critical thinking and reasoning.	Hsu & Hsieh (2013)

ical and reflective thinking. For variable "team work" we combined 6 competencies in connection with ability forming constructive and effective professional relationships in team. For variable "life-long learning" we combined 6 competencies in connection with ability to active participate and cooperate with educational procedures and assuming personal responsibility for professional education.

For fifth variable "technology knowledge" we combined 4 competencies in connection with ability for work with a computer and with medical equipment. For variable "work organization" we computed 5 competencies in connection with ability to organize the work and supervise nursing care activities. For variable "productivity" we combined 5 competencies in connection with ability to perform nursing care activities and assuming responsibility for decision making within practice. For variable "communication" we combined 6 competencies in connection with using professional assertive, therapeutic communication and ability constructive conflict resolution.

Student's assessment of competencies and employer's assessment of expected competences were measured on 5-point Lickert scale in which 1 means lowest range and 5 highest range of competencies attainability.

The reliability of both questionnaires was checked with the Cronbach's alpha test. Cronbach's alpha amounted to 0.923 in the survey filled in by students and to 0.963 in the survey intended for employers.

2.2 Sample

The research was carried out in spring 2014 at five faculties for nursing In Slovenia. The sample included third year students of full and part time bachelor's study programme of nursing care. Faculty deans were asked for permission to carry out the research.

At the two of five faculties the survey was sent in paper format. At the three faculties the survey was carried out online. Different approach for collecting the data was chosen because of the organisational site of institutions in connection with forwarding the survey to the students.

On Faculties on which the survey was carried out on line the email with survey link was sent to the Students Affairs Office and then was forwarded to students email addresses. We used simple random sampling. The sample included a total population of 485 students. 194 surveys were returned, which represent a 40 percent response. The survey for employers who employ nursing care graduates was sent by e-mail to several health care institutions in Slovenia.

An e-mail with a link to the survey was sent only to the assistant directors for health care in each institution with the request for participation in the survey. Included were 23 general hospitals, 2 clinical centres, 55 community health centres and 43 elderly and social care institutions, a total of 143 institutions. According to the data of Association of Health Care Institutions and Association of Social and Welfare Institutions, in Slovenia is 193 health care, social and welfare institutions. From sample we excluded 50 institutions because of poor contact data. The sample

Table 2: Average values of gaining joined competences – students' and employers' grade

	Actual competences – students (N=194)				Required competences – employers (N=47)					
Employability skills	*Min.*	*Max*	*M*	*SD*	Min.	Max	M	SD	**Z**	***P***
Communication	2,50	5	3,68	0,57	2,33	5	3,91	0,752	-4,945	*<0.001*
Productivity	2,00	5	3,51	0,60	2	5	3,8	0,83	-6,369	*<0.001*
Technology knowledge	1,00	5	3,36	0,82	2,6	6	4,83	0,90	-7,655	*<0.001*
Work organization	2,00	5	3,62	0,61	2,75	5	4,06	0,666	-6,266	*<0.001*
Life-long learning	1,67	5	3,38	0,73	1,67	5	3,67	0,842	-7,013	*<0.001*
Team work	1,33	5	3,31	0,70	1,83	5	3,76	0,865	-7,666	*<0.001*
Innovativeness	2,10	5	3,62	0,58	1,8	5	3,66	0,841	-5,369	*<0.001*
Performing professional nursing	1,14	5	3,60	0,60	2,14	5	3,82	0,839	-6,893	*<0.001*
Total			3,5				3,94			

represent 74,1 percent of total population. 47 surveys were completed, which represent a 32,9 percent response.

3 Results

The estimates of students' self-assessment of achieved competences were compared to the estimates of competences required by employers. A Kolmogorov–Smirnov test was performed for each individual joined competence (employability skills), which shows that not all variables distributed normally. On the basis of the test, the estimates of employability skills as seen by students and employers were compared to each other with a nonparametric test in order to find differences in the arithmetic mean (Mann-Whitney and Wilcox rank-sum test). It was established that the actual individual competence achievement is rated better by employers, since the average values were higher in 38 out of a total of 49 competences. Results (Table 2) show that employers rated all 8 employability skills better than students ($p < 0.05$).

In order to establish the link between the "self-evaluation of actual competence achievement" and the "average study grade" variables, a test of exploratory analysis was carried out with the aim of verifying the presumption regarding normal distribution and homogeneity. We then performed the Kolmogorov–Smirnov test, which proves that the "average grade" and "individual competence" variables do not divide in a normal manner (all competences amounted to $p < 0.05$). Therefore, Spearman's correlation test was used for further testing. It was found that there is a statistically significant weak correlation ($r = 0.22$; $p = 0.002$) between the above two variables.

In the research, we also checked the level of required competences according to the healthcare institution level. Group 1 included primary level healthcare institutions, while group 2 included secondary and tertiary level healthcare institutions. Institutions operating at secondary and tertiary levels were combined, because only one tertiary level healthcare institution participated in the survey. Considering the number of units in a sample (N=47), the Shapiro-Wilk test, which shows that the distribution of variables is not normal ($p < 0.05$), was used. Table 3 shows average grade values for "required joined competences", which show that secondary and tertiary level institutions rated the required competences with a higher average grade.

The "knowledge of technology" competence represents an exception. By using the Mann-Whitney test for determining differences between the required competences according to the level of healthcare following a two-sided testing, we could not prove any significant differences.

Table 3: Values of average ranks for the employability skills regarding the type of institution variable

Employability skills	Level of healthcare	N	M	t
Performing professional nursing	Secondary and tertiary level	27	26.70	721.00
	Primary level	20	20.35	407.00
Innovativeness	Secondary and tertiary level	27	26.57	717.50
	Primary level	20	20.53	410.50
Team work	Secondary and tertiary level	27	26.96	728.00
	Primary level	20	20.00	400.00
Life-long learning	Secondary and tertiary level	27	24.78	669.00
	Primary level	20	22.95	459.00
Technological knowledge	Secondary and tertiary level	27	23.67	639.00
	Primary level	20	24.45	489.00
Work organisation	Secondary and tertiary level	27	23.56	636.00
	Primary level	20	24.60	492.00
Productivity	Secondary and tertiary level	27	25.54	689.50
	Primary level	20	21.93	438.50
Communication	Secondary and tertiary level	27	25.33	684.00
	Primary level	20	22.20	444.00

4 Discussion

The research established that employers generally rated actual and required competences higher than nursing care students. We expected that the self-evaluation of achieved competences would be rated higher by students than by employers. This would prove that students are more self-confident and have suitable knowledge and skills when entering the labour market. They are also prepared for new work tasks and eager to improve their acquired knowledge. The fact that employers rated graduates' acquired competences with very high grades is rather interesting. One could assume that graduates meet employers' demands when they graduate. One could also claim that their employment skills are highly developed. Therefore, the RH1 hypothesis was not confirmed.

This also raises the question of how to improve students' self-confidence and which specific knowledge within individual competences was rated as weak by students. Our research established that students rate their competences in the field of team work, technological knowledge and technologies, as well as life-long learning with the lowest grade. On the other hand, employers attributed the lowest grade to competences that were classified into the employment skills group, i.e. innovativeness and life-long learning.

De Souza (2012) finds that nursing care students grade the acquisition of individual competences very highly, especially in the field of performing professional nursing, while they consider themselves less competent in the field of research in nursing care and life-long learning. The author also states that nursing care study programmes need additional contents in areas where competence levels are deemed low. According to the National Association of Employers and Colleges (2009), employers believe that an important skill deficiency occurs in the development of effective communication skills and technological knowledge.

Van Schoot and Streumer (2003) also state that students and nursing care graduates nowadays meet a greater diversity and complexity of conditions in nursing care and care at institutions. An update and expansion of course syllabi is of key importance for improving the transfer of theory into practice. There is a lack of research into the manner in which study programmes and the acquisition of individual competences affect students' and graduates' employment.

West and colleagues (2014) describe the importance of introducing additional programmes, the so-called programmes for renewing knowledge and skills after graduation that ease nursing care graduates' transition to the labour market and give them a chance to refresh and further develop their skills and competences, thus helping them find or retain employment. Pavlin (2012) states that the main goal of higher education is to prepare graduates for entering the labour market, which can be achieved by developing competences in the higher education system.

The research also showed a difference in the estimates of required competences among employers. Employers at the primary healthcare level demand a lower level of acquired competences. Graduates must achieve the highest level of required competences for the secondary and tertiary healthcare levels.

Employers at the primary level rated the "Technological knowledge" employment skill higher. These findings enabled us to reject the RH2 hypothesis. Defloor et al. (2006) also find that a higher level of cognitive and psychomotor competences is required in special fields of nurse activities. It is very important for graduates and employees to have a chance to acquire new competences in specific areas of their work, along with renewing those competences they already gained. It is also very important for employers to get to know students while they are performing clinical practice. On the other hand, Liptak (2010) explains that most competences and skills that employers require and are found lacking in new employees are not job-specific, but the kinds of skills required in most occupations.

The research also shows that students with a higher average study grade evaluate the level of achieving individual competences better. Findings prove that students, who are successful in their studies, and part-time students are more self-confident and better prepared for the transition from study to independent work in a clinical environment. Lee-Hsieh, Kao, Kuo and Tseng (2003) also find that part-time students mark the level of competence acquisition right after finishing their studies higher, while the self-evaluation of individual competence compounds (communication, professional growth, clinical competences and competences in the field of leadership) is statistically significant and rated better by full-time students after a 3 months introduction into independent work.

Those findings are an important basis for further research in the sense of following graduates' employability and marking the level of achieving individual competences after they become employed. On the other hand, Pavlin (2012) finds that high average grades do not affect graduates' good career opportunities in Slovenia. Therefore, Missen, McKenna and Beauchamp (2014) stress that graduates are a "vulnerable population" after finishing their studies. These require the introduction of the so-called supporting educational programmes that help graduates with the transition to the labour market. Such programmes should be intended for graduates' specialisation, thus enabling an easier acceptance of the work role, and as improvement of knowledge and skills required in clinical practice.

5 Conclusion

It is very important to monitor the requirements of the labour market in terms of ongoing communication with employers who can best evaluate the special knowledge needs, i.e. individual general, social and special competences or advanced knowledge in the context of life-long learning. We also suggest the introduction of a permanent and continuous general and specific competences achievement monitoring by students and periodic assessments of competences, knowledge and skills required by employers.

In addition, we recommend further research in the field of employability and career aspiration of nursing care graduates. Further research could be based on a longitudinal study to monitor the achievement of competences at the point of graduation and in the first year after graduation (at six-month intervals). Such data would serve to continuously follow nursing care graduates' employability and as a basis for defining the missing key knowledge and competences.

These could be introduced at higher education institutions by offering supporting professional courses for renewing one's competences in the field of nursing care. In doing so, we would strengthen links between graduates after they finish their studies, while continuously following their transition to the labour market, thus helping them to improve individual competences and knowledge in specific professional fields.

It is important to note that such competence renewal educational courses would be intended for individuals who are already employed in the field of nursing care and would want to acquire the so-called "complex–progressive" knowledge or renew and upgrade the already acquired knowledge and competences. Higher education institutions could use those educational programmes as a marketing activity and for gaining projects in the field of life-long learning, as well as for the purposes of career orientation. Our proposal for practical improvement could be supported by Pavlin's findings (2012), which clearly show that the recognisability of study programmes is a very important factor for employing higher education graduates.

It is important to follow employment and employability. Employment data are an important segment allowing a continuous following of graduates on the labour market. Such data show whether graduates are employed, how long did it take them to find a job after graduation and in which field they found employment. A higher education institution could monitor the employment and unemployment by obtaining data from graduates or regional Employment Services of Slovenia. Such data should be acquired in intervals, i.e. one year and five years after graduation.

A higher education institution should set up a mechanisms for monitoring employment and unemployment within the supported information system and career centres at higher education institutions or universities.

Literature

Allen, J., & van der Velden, R. (Ed.). (2009). Competencies and Early Labour Market Careers of Higher Education Graduates. Retrieved from http://www.decowe.org/static/uploaded/htmlarea/finalreportshegesco/Competencies_and_Early_Labour_Market_Careers_of_HE_Graduates.pdf

Canadian Nurses Association. (2010). Core Competencies Framework. Retrieved from https://www.cna-aiic.ca/~/media/cna/files/en/competency_framework_2010_e.pdf

Codier, E., & Odell, E. (2014). Measured emotional intelligence ability and grade point average in nursing students, *Nurse Education Today*, 34(4), 608–612, http://dx.doi.org/10.1016/j.nedt.2013.06.007

Defloor, T., Van Hecke, A., Verhaeghe, S., Gobert, M., Darras, E., & Grypdonck, M. (2006). The clinical nursing competences and their complexity in Belgian general hospitals. *Journal of Advanced Nursing*, 56(6), 669-78, http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2648.2007.04245.x/pdf

de Souza, S. N., Deggau H., & Miyadahira, A. M. K. (2012). Development of competences in the nursing course: perception of graduate students *Ciencia, Cuidado e Saude*, 11, 243-250, http://dx.doi.org/10.4025/ciencuidsaude.v10i5.17082

Eurico, S. T., Silva, J. A. M., & Valle P. O. (2015). A model of graduates' satisfaction and loyalty in tourism higher education: The role of employability, *Journal of Hospitality, Leisure, Sport & Tourism Education*, 30–42, http://dx.doi.org/10.1016/j.jhlste.2014.07.002

European Commission. (2011). Transferability of Skills across Economic Sectors: Role and Importance for Employment at European Level. Retrieved from http://ec.europa.eu/social/BlobServlet?docId=7124&langId=en

European Federation of Nurses associations Workforce Committee. (2014). EFN Matrix on the 4 Categories of the Nursing Care Continuum. Retrieved from http://www.zbornica-zveza.si/sl/definicija-efn-stirih-poklicnih-kategorij-v-zdravstveni-negi-na-ravni-eu

European Federation of Nurses Associations. (April 2015). EFN Competency Framework. EFN Guideline to implement Article 31 into national nurses' education programmes. Retrieved from http://www.efnweb.be/wp-content/uploads/EFN-Competency-Framework-19-05-2015.pdf

Fan, J.-Y., Wang, Y. H., Chao, L. F., Jane, S.-W., & Hsu, L.-L. (2015). Performance evaluation of nursing students following competency - based education. *Nurse Education Today*, 35(1), 97-103, http://dx.doi.org/10.1016/j.nedt.2014.07.002

Harvey, L. (2001). Defining and measuring employability. *Quality in Higher Education*, 7(2), 97–110, http://dx.

doi.org/10.1080/13538320120059990

Hsu, L.-L., & Hsieh, S.-I. (2013). Development and psychometric evaluation of the competency inventory for nursing. Retrieved from: http://www.sciencedirect.com/science/article/pii/S0260691712001827#

Kim, K. H., Lee, A. Y., Eudey, L., & Wong Dea, M. (2014). Improving Clinical Competence and Confidence of Senior Nursing Students through Clinical Preceptorship. *International Journal of Nursing*, (1)2, 183-209, http://dx.doi.org/10.15640/ijn.v1n2a14

Kvas, A., Seljak J., & Stare J. (2014). Training Needs Assessment for Leaders in Nursing Based on Comparison of Competency Models. *Organizacija*, 47(1), 66-75, http://dx.doi.org/10.2478/orga-2014-0006

Lee-Hsieh, J., Kao, C., Kuo, C., & Tseng, H.-F. (2003). Clinical Nursing Competences of RN-to-BSN Students in a Nursing Concept-Based Curriculum in Taiwan. *Journal of Nursing Education*, 42 (12), 536-45

Liptak, J. J. (2010). Employability Skills Inventory. Retrieved from: https://www.careerkids.com/uploads/CKDownloads/EmployabilitySkillsInv.pdf

Marjetič, E., & Lesjak, D. (2013). Trg dela in visokošolski razpis za vpis - Analiza trga dela v povezavi z visokošolskimi vpisnimi mesti ter številom študentov in diplomantov [Labour Market and Undergraduate Tender for Subscription –Labour Market Analysis in Connection between Under graduate Tender for Subscription and Number of Students and Graduates]. RS Ministrstvo za izobraževanje, znanost, kulturo in šport. Retrieved from: http://www.mizs.gov.si/fileadmin/mizs.gov.si/pageuploads/Visoko_solstvo/Statistika_in_analize/Analiza_trga_dela_jan2013.pdf

Mason, G., Williams, G., & Cranmer, S. (2009). Employability skills initiatives in higher education: what effects do they have on graduate labour market outcomes? *Education Economics*, 17(1), 1-30, http://dx.doi.org/10.1080/09645290802028315

Minten, S., & Forsyth, J. (2014). The careers of sports graduates: Implications for employability strategies in higher education sports courses: *Journal of Hospitality, Leisure, Sport & Tourism Education*, 15, 94–102, http://dx.doi.org/10.1016/j.jhlste.2014.06.004

Missen, K., McKenna, L., & Beauchamp, A. (2014). Satisfaction of newly graduated nurses enrolled in transition-to practice. *Journal of Advanced Nursing*, 70(11), 2419-33, http://dx.doi.org/10.1111/jan.12464

Mogonea, F. (2015). Portfolio-Tool for (self) Evaluation of Students-Future Teachers, *Procedia - Social and Behavioral Sciences*, 180, 860 – 864, http://dx.doi.org/10.1016/j.sbspro.2015.02.227

National Association of Employers and Colleges (2009). 2009 Experiential Education Survey. Retrieved from: http://www.immagic.com/eLibrary/ARCHIVES/GENERAL/NACE_US/N090318E.pdf

Nurse of the Future Competency Committee. (2010). Building the Framework for the future of nursing education and practice. Retrieved from http://www.mass.edu/nahi/documents/NursingCoreCompetencies.pdf

Yorke, M. (2006). Employability in higher education: what it is - what it is not. Retrieved from https://www.heacademy.ac.uk/sites/default/files/id116_employability_in_higher_education_336.pdf

Pavelka, J. (2014). Trends Emerging on the Czech Higher-Education Market and their Influence on the Employability of Graduates in Practice since 1989, *Procedia - Social and Behavioral Sciences*, 139, 87 – 92, http://dx.doi.org/10.1016/j.sbspro.2014.08.031

Pavlin, S. (2012). Slovensko visokošolstvo s perspektive zaposljivosti diplomantov [Slovenian Higher Education from Graduate Employability Perspective]. University of Ljubljana, Faculty of social Sciences. Retrieved from: http://knjigarna.fdv.si/s/u/pdf/439.pdf

Plazar, N., & Babnik, K. (2011). Zaposljivost diplomantov UP Visoke šole za zdravstvo, pridobljene kompetence ter dejavniki in učinki zavzetosti studentov v času študija : vmesno poročilo [Employabilty of Graduates from University of Primorska, Faculty of Health Science, Acquired Competences, Factors and Effects of Students Engagement in Time of Study: Interim Report]. Izola: Visoka šola za zdravstvo v Izoli.

Ravindra, J., & Sheelam, J. (2013). Conceptualization, Measure Development and Empirical Assessment of Career Oriented Attitudes and Employability of Technology Graduates. Retrieved from The Journal of Business Perspective: http://vis.sagepub.com.ezproxy.lib.ukm.si/content/17/2/143.full.pdf+html

Robinson, J. P. (2000). What Are Employability Skills? Retrieved from http://www.fremont.k12.ca.us/cms/lib04/ca01000848/centricity/domain/189/employability-skills.pdf

Shafie Asmaak, L., & Surina, N. (2010). Employability Awareness among Malaysian Undergraduates. *International Journal of Business and Management*, 5 (8). Retrieved from: http://www.ccsenet.org/journal/index.php/ijbm/article/viewFile/6917/5487

Singh, P., Thambusamy, R. X., & Ramly, M. A. (2014). Fit or Unfit? Perspectives of Employers and University Instructors of Graduates' Generic Skills. *Procedia - Social and Behavioral Science*, 123, 315 – 324, http://dx.doi.org/10.1016/j.sbspro.2014.01.1429

The Nursing and Midwifery Council (NMC). (2010). Standards for competence for registered nurses. Retrieved from http://www.nmc.org.uk/globalassets/sitedocuments/standards/standards-for-competence.pdf

The Nursing Council of Hong Kong. (2012). Core competences for registered Nurses (General). Retrieved from http://www.mass.edu/currentinit/documents/NursingCoreCompetencies.pdf

TUNING. (2012). TUNING project - TUNING Educational Structures in Europe. Retrieved from: http://tun-

ing.unideusto.org/tuningeu/

Official Journal of the EU. (2006/394). Priporočilo evropskega parlamenta in sveta z dne 18. decembra 2006 o ključnih kompetencah za vseživljenjsko učenje [EU Parliament and Council Recommendation from December 18th 2006 About Key Competences for Lifelong Learning]. Retrieved from http://eur-lex.europa.eu/legal-content/SL/TXT/?uri=uriserv:OJ.L_.2006.394.01.0010.01.SLV

Official Journal of the EU. (2013). Direktiva 2013/55/EU Evropskega parlamenta in sveta [Directiva 2013/55/EU of European Parliament and Council]. Retrieved from http://www.fzv.uni-mb.si/page/images/stories/File/NAKVIS/Direktiva%202013-55-EU%20%2820.11.2013%29.pdf

van Schoot, E., Streumer, J. N. (2003). The impact of the curriculum on the employability of nursing and healthcare graduates. *International Journal of Human Resources Development and Management*, 3(4), 296-307, http://dx.doi.org/10.1504/IJHRDM.2003.003406

West, N., Berman, A., Karshmer, J., Priori, S., Van, P., Wallace, J. (2014). Preparing New Nurse Graduates for Practice in Multiple Settings: A Community-Based Academic-Practice Partnership Model. *Journal of Continuing Education in Nursing*, 45(6), 252-256, http://dx.doi.org/10.3928/00220124-20140417-03

Zavod Republike Slovenije za zaposlovanje, Območna služba Maribor (2013). Posredovanje podatkov o ponudbi in povpraševanju po strokovni izobrazbi s področja zdravstva [Data Transmission about Higher Education Supply and Demand on the Health Field]. Private communication, University of Maribor, Faculty of Health Sciences

Zavod Republike Slovenije za zaposlovanje. (2014). Strokovna izhodišča za leto 2015 [Professional Starting Point for Year 2015]. Retrieved from http://www.ess.gov.si/_files/6551/strokovna_izhodisca_za_leto_2015.pdf

Zbornica zdravstvene in babiške nege Slovenije - Zveza društev medicinskih sester, babic in zdravstvenih tehnikov Slovenije. (2014). Definicija EFN štirih poklicnih kategorij v zdravstveni negi na ravni EU [Definition of Four Occupation Categories in Health Care on EU Level]. Retrieved from http://www.zbornica-zveza.si/sl/definicija-efn-stirih-poklicnih-kategorij-v-zdravstveni-negi-na-ravni-eu

Zbornica zdravstvene in babiške nege Slovenije - Zveza društev medicinskih sester, babic in zdravstvenih tehnikov Slovenije. (2014). Izjava Zbornice-Zveze za javnost glede pobud o uvajanju novih izobraževalnih programov s področja zdravstvene nege [Statement from Nurses and Midwives Association of Slovenia Regarding Initiatives of New Educational Programs Introduction in The Health Care Field]. Retrieved from: http://www.zbornica-zveza.si/sl/izjava-zbornice-zveze-za-javnost-glede-pobud-o-uvajanju-novih-izobrazevalnih-programov-s-podrocja

Železnik, D., Brložnik, M., Hajdarjević Buček, I., Dolinšek, M., Filej, B., Istenič, B., & Verebič, M. (2008). Poklicne aktivnosti in kompetence v zdravstveni in babiški negi [Profession activities and competences in Nurses and Midwives Care]. Ljubljana: Zbornica zdravstvene in babiške nege Slovenije - Zveza društev medicinskih sester, babic in zdravstvenih tehnikov Slovenije.

Barbara Donik is a lecturer at the University of Maribor, Faculty of Health Sciences. She conducted her master degree at University of Maribor, Faculty of Organizational Sciences in the field of social management. As a lecturer at the Faculty of Health Sciences she is involved in the field of Surgical and Oncology Nursing with Surgery, Communication in Health Care and Nursing Care in Intensive Care Unit. Her research interests include career development in nursing and education and pain management. She is also involved in international and bilateral research projects.

Majda Pajnkihar is an Associate Professor and the Dean of the Faculty of Health Sciences, University of Maribor. She is also a Senior Research Fellow and the Head of Institute of Nursing Care. She is an expert in Nursing theory, Philosophy and Qualitative Research in Nursing, Communication and Interpersonal Relations in Nursing, Child and Adolescent Nursing. Her research interests are nursing development, education and research. She is also involved as supervisor at postgraduate nursing care study program and in many research projects.

Mojca Bernik is an Assistant professor at the University of Maribor, Faculty of Organizational Sciences. She conducts research in the field of Human Resource Management, notably in topics related to Human Resource Development. She has many years of experience of teaching and research, mainly in Planning Human Resource and Organizing Human Resource processes.

Zaposljivost diplomantov zdravstvene nege

Ozadje: Visokošolske inštitucije se srečujejo s problemom spremljanja zaposljivosti dipomantov zdravstvene nege in vzpostavitvijo izbranih mehanizmov, ki bi jim omogočili prehod iz izobraževalnega v delovno okolje. Namen članka je prikazati zaposljivost diplomantov zdravstvene nege s pomočjo samoocene njihovih kompetenc v zadnjem študijskem letu in ugotoviti povezanost med oceno kompetenc delodajalcev, samooceno kompetenc študentov in uspešnostjo pri študiju.
Metode: Anketni vprašalnik je bil razdeljen med študente zadnjega letnika zdravstvene nege rednega in izrednega študija. Raziskava je bila izvedena na petih fakultetah za zdravstvo in zdravstvene nege v Sloveniji in med delodajalci (zdravstvene inštitucije), ki zaposlujejo diplomante zdravstvene nege. Raziskovali smo kompetence, ki si jih študentje pridobijo med študijem in kompetence, za katere delodajalci pričakujejo, da jih bodo diplomanti zdravstvene nege ob končanem študiju imeli. V vzorec je bilo vključenih 485 študentov. 194 pravilno izpolnjenih anketnih vprašalnikov je bilo vrnjenih, kar predstavlja 40 % odzivnost. Za združevanje kompetenc smo uporabili Kolmogorov-Smirnov test. S pomočjo Mann-Whitneyjevega in Wilkinsonovega rang testa smo ugotavljali statistično pomembne razlike med posameznimi spremenljivkami. Za ugotavljanje povezanosti dveh spremenljivk smo uporabili Spearmanov koeficient korelacije.
Rezultati: Mann-Whitney in Wilkinsonov rang test sta pokazala, da delodajalci v povprečju višje ocenjujejo dejanske in zahtevane kompetence kot študenti zdravstvene nege, pri čemer so razlike statistično pomembne. S pomočjo Spearmanovega koeficienta korelacije je bilo ugotovljeno, da obstaja med spremeljivkama “povprečna ocena” in “kompetence” šibka povezanost, ki je statistično značilna.
Zaključek: Rezultati raziskave so pokazali, da je nujno stalno spremljanje splošnih in specifičnih kompetenc študentov skupaj s periodičnim preverjanjem zahtevanih kompetenc s strani delodajalcev. Potrebno je spremljanje zahtev trga dela v smislu stalnega povezovanja z delodajalci, ki lahko posredujejo potrebe po specifičnem znanju.

Ključne besede: *zaposljivost, diplomanti zdravstvene nege, kompetence, trg dela*

Reviewers in 2015[1]

Fakhrul Zaman Abdullah, Fahad Bin Sultan University, College of Business and Management, Tabuk, Saudi Arabia
Khalid Aboura, University of Dammam, College of Business Administration, Damman, Saudi Arabia
Andrew A. Adams, Meiji University, Graduate School of Business Administration, Tokyo, Japan
Klara Antlova, Technical University of Liberec, Faculty of Economics, Liberec, Czech Republic
Łukasz Arendt, University of Lodz, Faculty of Economics and Sociology, Lodz, Poland
Alireza Aslani, University of Tehran, Faculty of New Sciences and Technology, Tehran, Iran
Emira Bečić, Ministry of Science, Education and Sports, Zagreb, Croatia
Mojca Bernik, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Mahdi Bohlouli, University of Siegen, Faculty of Natural Sciences and Engineering, Siegen, Germany
Lucie Böhmová, University of Economics, Prague, Faculty of Informatics and Statistics, Prague, Czech Republic
Vesna Bosilj Vukšić, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia
Zita Bošnjak, University of Novi Sad, Faculty of Economics in Subotica, Serbia
Javier F. Boyas, The University of Mississippi, School of Applied Sciences, University, MS 38677, USA
Brendan Burchell, University of Cambridge, Department of Sociology, Cambridge, UK
Bernard Casey, University of Warwick, Institute for Employment Research and London School of Economics, UK
Katarzyna Cheba, Westpomeranian University of Technology, Szczecin, Poland
Jan Čapek, Masaryk University, Faculty of Economics and Administration, Brno, Czech Republic
Mladen Čudanov, University of Belgrade, Faculty of Organizational Sciences, Beograd, Serbia
José María Fernández-Crehuet, Technical University of Madrid, Department of Organization, Engineering, Business Administration and Statistics, Madrid, Spain
Lidia Galabova, Technical University Sofia, Department of Economics, Industrial Engineering and Management, Sofia, Bulgaria
Bartłomiej Gawin, University of Gdansk, Department of Business Informatics, Sopot, Poland
Boštjan Gomišček, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Edward Granter, University of Manchester, Manchester Business School, Manchester, UK
Vladimiras Gražulis, Mykolas Romeris University, Faculty of Politics and Management, Vilnius, Lithuania
Marta Gross, University of Warmia and Mazury, Faculty of Geodesy, Geospatial and Civil Engineering, Olsztyn, Poland
Jonas Hedman, Copenhagen Business School, Department of IT Management, Copenhagen, Denmark
Miroljub Ignjatović, University of Ljubljana, Faculty of Social Sciences, Ljubljana, Slovenia
Dejan Ilić, Faculty of Strategic and Operational Management, Belgrade, Serbia
Mojca Indihar Štemberger, University of Ljubljana, Faculty of Economics, Ljubljana, Slovenia
Eva Jereb, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Mojca Juriševič, University of Ljubljana, Faculty of Education, Ljubljana, Slovenia
Marija Kaštelan Mrak, University of Rijeka, Faculty of Economics, Rijeka, Croatia
Richard Kemp, Kemp IT Law, London, UK
Miroljub Kljajić, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Jure Kovač, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Tatjana Kovač, Faculty of Commercial and Business Sciences, Celje, Slovenia
Tatjana Kozjek, University of Ljubljana, Faculty of Administration, Ljubljana, Slovenia
Konrad Kułakowski, AGH University of Science and Technology, Department of Applied Computer Science, Krakow, Poland
Aleksandra Labus, University of Belgrade, Faculty of Organizational Sciences, Beograd, Serbia
Violet Lazarevic, Monash University, Monash Business School, Melbourne, Australia
Gregor Lenart, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Liudmila Lobanova, Vilnius Gediminas Technical University, Department of International Economics and Management, Vilnius, Lithuania
Matjaž Maletič, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Damjan Maletič, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Miha Marič, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Janko Marovt, University of Maribor, Faculty of Economics and Commerce, Maribor, Slovenia
Miloš Maryška, Prague University of Economic, Department of Information Technologies, Prague, Czech Republic

1 Before November 6, 2015

Renata Mekovec, University of Zagreb, Faculty of Organization and Informatics, Varaždin, Croatia
Bożena Mielczarek, Wrocław University of Technology, Institute of Organization and Management, Wroclaw, Poland
Katja Mihelič, University of Ljubljana, Faculty of Economics, Ljubljana, Slovenia
Veselina Milanova, University of St. Gallen, Institute of Insurance Economics, St. Gallen, Switzerland
Monika Mynarska, Cardinal Stefan Wyszynski University, Warsaw, Poland
Valentinas Navickas, Kaunas University of Technology, Faculty of Economics and Management, Kaunas, Lithuania
Juraj Nemec, Masaryk University, Faculty of Economics and Administration, Brno, Czech Republic
Marian Niedźwiedziński, University of Lodz, Faculty of Economics and Sociology, Lodz, Poland
Aleš Novak, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Vesna Novak, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Chidiebere Ogbonnaya, University of East Anglia, Faculty of Social Sciences, Norwich, UK
Yasmin Ortiga, Nanyang Technological University, Singapore
Sirous Panahi, Iran University of Medical Sciences, Tehran, Iran
József Poór, Szent István University, Faculty of Economics and Social Sciences, Gödöllő, Hungary
Vojko Potočan, University of Maribor, Faculty of Economics and Commerce, Maribor, Slovenia
Tomasz Rachwał, Pedagogical University of Cracow, Institute of Geography, Kraków, Poland
Vesela Radović, EDUCONS University, Faculty of Applied Security, Sremska Kamenica, Serbia
Vladislav Rajkovič, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Daniel Rauhut, Norwegian Institute for Urban and Regional Research (NIBR), Oslo, Norway
Vasja Roblek, University of Primorska, Faculty of Management, Koper, Slovenia
Külli Sarapuu, Ragnar Nurkse School of Innovation and Governance, Faculty of Social Sciences, Tallinn, Estonia
Shulagna Sarkar, Institute of Public Enterprise, Osmania University Campus, Hdyerabad, India
Marjan Senegačnik, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Vinita Sinha, Symbiosis Centre for Management and Human Resource Development, Pune, India
Brigite Skela Savič, Faculty of Health Care Jesenice, Slovenia
Zdenek Smutny, University of Economics, Faculty of Informatics and Statistics, Prague, Czech Republic
Rimantas Stašys, Klaipeda University, Department of Management, Klaipeda, Lithuania
Simona Sternad Zabukovšek, University of Maribor, Faculty of Economics and Commerce, Maribor, Slovenia
František Sudzina, Aalborg University, Faculty of Social Sciences, Aalborg, Denmark
Maria Svidronova, Matej Bel University, Faculty of Economics, Banska Bystrica, Slovakia
Jana Syrovatkova, University of Business, Prague, Czech Republic
Maruška Šubic Kovač, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Ljubljana, Slovenia
Adeyinka Tella, University of Ilorin, Department of Library and Information Science, Ilorin, Nigeria
Marek Tomaszewski, University of Zielona Góra, Faculty of Economics and Management, Zielona Góra, Poland
Olga Troitschanskaia, Johannes Gutenberg University, Mainz, Germany
Alessandro Vizzarri, University of Tor Vergata, Department of Enterprise Engineering, Rome, Italy
Wan Khairuzzaman Wan Ismail, Universiti Teknologi, Kuala Lumpur UTM International Business School, Kuala Lumpur, Malaysia & College of Business Administration, Jazan University, Kingdom of Saudi Arabia
Gerhard Wilhelm Weber, Middle East Technical University (ODTÜ), Institute of Applied Mathematics (UME), Ankara, Turkey
Georg Weichhart, PROFACTOR GmbH, Steyr-Gleink, Austria
Borut Werber, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
Ewa Ziemba, University of Economics in Katowice, Institute of Business Information Systems, Katowice, Poland
Borut Zupančič, University of Ljubljana, Faculty of Electrical Engineering, Ljubljana, Slovenia
Anja Žnidaršič, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia

AUTHOR GUIDELINES / NAVODILA AVTORJEM

Manuscripts considered for publication in Organizacija (organizacija@fov.uni-mb.si) are those which:

- *Contain original work* – which is not published elsewhere in any medium by the authors or anyone else and is not under consideration for publication in any other medium. The author(s) is/are also responsible for any violations of the copyright regulations.
- *Are focused on the core aims and scope of the journal*: Organizacija is an interdisciplinary peer reviewed journal that seeks both theoretically and practically oriented research papers from the area of organizational science, business information systems and human resources management.
- *Are clearly and correctly written* – should contain all essential features of a complete scientific paper, should be written in a clear, easy to understand manner and be readable for a wide audience.
- *Are written in English* – should be clearly and grammatically written, in an easily readable style. Attention to detail of the language will avoid severe misunderstandings which might lead to rejection of the paper. Correct language is the responsibility of the authors. Unless the author is an English native speaker, the paper must be proofread by a language editor, English native speaker

All parts of the manuscript should be type-written (font size 12), with margins of 2.5 cm. Pages should be numbered consecutively throughout the manuscript. The text should be subdivided into numbered chapters. Figures and tables, consecutively numbered (Figure 1, Figure 2, ...; Table 1, Table 2, …) can be included in electronic form in the text. All lettering and figure elements must be large enough to be readable when figure or table has been reduced to fit journal page or column. All figures and tables must be specifically referred in the text. Colour pictures cannot be published in the printed version of the journal; colours appear only in the internet version. The paper should start with a cover page with names and mailing and electronic addresses of the authors. To assure the anonymity of the refereeing procedure the names of the authors should not appear in the text.

When referring to the literature use the APA style (http://www.apastyle.org/). A short description of the APA style is included in the Guidelines for Authors (see http://www.degruyter.com/view/j/orga).

All the papers will be reviewed by at least two referees. Based on the opinions and suggestions of the reviewers, the editors accept the paper, demand minor or major enhancements, or reject the paper. If major enhancements are required the upgraded paper is reviewed again.

Manuscripts can be submitted via journal web site (http://organizacija.fov.uni-mb.si). For further information and clarifications contact Organizacija's editorial office (organizacija@fov.uni-mb.si or joze.zupancic@fov.uni-mb.si).

Address of the Editorial office:
University of Maribor,
Faculty of Organizational Science
Kidričeva cesta 55a
4000 Kranj, Slovenia
Fax: +386-4-2374-299
Phone: +386-4-2374-226

V reviji Organizacija objavljamo znanstvene članke, rezultate raziskovalnega dela avtorjev. Predloženi prispevki naj bodo napisani v angleškem jeziku. Imeti morajo strukturo IMRAD, ki je običajna za znanstvena in strokovna besedila (informacija n.pr. na http://www.uta.fi/FAST/FIN/RESEARCH/imrad.html). Objavljamo dela s predmetnega področja revije, ki še niso bila objavljena in niso bila poslana v objavo v kakšni drugi reviji ali zborniku. Avtorji so odgovorni za vse morebitne kršitve avtorskih pravic.

Besedilo naj bo oblikovano za tiskanje na papirju in levo poravnano. Na začetku prispevka, takoj za naslovom, naj bo povzetek (izvleček) dolžine največ 250 besed, ključne besede, v končni – sprejeti verziji članka pa na koncu prispevka tudi kratek strokovni življenjepis vsakega od avtorjev (do 10 vrstic) in letnica rojstva (zaradi vnosa podatkov v knjižnični informacijski sistem COBISS, v reviji letnica ne bo objavljena). Na prvi strani besedila naj bodo napisani le naslov prispevka, imena in (poštni in elektronski) naslovi avtorjev članka, po možnosti tudi telefonska številka enega od avtorjev. Da bi zagotovili anonimnost recenziranja, naj se imena avtorjev ne pojavljajo v besedilu prispevka. Na koncu članka, za življenjepisi, naj bo slovenski prevod naslova, povzetka in ključnih besed.

Članek naj bo razčlenjen v oštevilčena poglavja. Naslovi članka, poglavij in podpoglavij naj bodo napisani z malimi črkami, da so razvidne kratice. Slike in tabele v elektronski obliki vključite kar v besedilo. Besedilu so lahko priložene slike in/ali tabele na papirju v obliki pripravljeni za preslikavo. V tem primeru naj bo vsaka slika na posebnem listu, oštevilčene naj bodo z arabskimi številkami, v besedilu naj bo označeno, kam približno je treba uvrstiti sliko: na tem mestu naj bo številka slike/tabele in njen podnapis. Slike bomo praviloma pomanjšali in jih vstavili v članek. Upoštevajte, da morajo biti oznake in besedila na vseh slikah dovolj velika, da bodo čitljiva tudi pri velikosti slike, kot bo objavljena v reviji. Vse slike naj bodo črno-bele z belim ozadjem; barvnih slik v tiskani verziji revije ne moremo objaviti, barve so vidne le v spletni verziji.

Članki morajo biti pred objavo v Organizaciji lektorirani. Končno verzijo mora lektorirati naravni govorec oz. lektor s primerljivim znanjem angleščine.

Seznam citirane literature oblikujte v APA stilu; podroben opis le-tega je na http://www.apastyle.org/, povzetek pa je tudi v podrobnem navodilu avtorjem na www.versita.com/o/authors. Ne uporabljajte opomb za citiranje; eventualne opombe, ki naj bodo kratke, navedite na dnu strani. Označite jih z arabskimi številkami.

Predložene prispevke pregledata in ocenita najmanj dva recenzenta. Na osnovi mnenj in predlogov recenzentov uredniški odbor ali urednik sprejmejo prispevek, zahtevajo manjše ali večje popravke in dopolnitve ali ga zavrnejo. Če urednik oziroma recenzenti predlagajo večje popravke, se dopolnjeni prispevek praviloma pošlje v ponovno recenzijo.

Članke za objavo lahko predložite preko spletnega mesta http://organizacija.fov.uni-mb.si. Za nadaljnje informacije in pojasnila se lahko obrnete na uredništvo Organizacije (organizacija@fov.uni-mb.si ali joze.zupancic@fov.uni-mb.si).

Naslov uredništva:
Univerza v Mariboru,
Fakulteta za organizacijske vede
Kidričeva cesta 55a
4000 Kranj
Faks: 04-2374-299
Tel.: 04-2374-226

Prva slovenska revija za organizacijska in kadrovska raziskovanja in prakso. Revijo sofinancira Javna agencija za raziskovalno dejavnost Republike Slovenije.
Ponatis in razmnoževanje deloma ali v celoti brez pisnega dovoljenja nista dovoljena. Izdajatelj: Univerza v Mariboru, Fakulteta za organizacijske vede Kranj, Založba MODERNA ORGANIZACIJA, Kidričeva cesta 55a, KRANJ, telefon: 04 23 74 200,
telefax: 04 23 74 299, E-pošta: organizacija@fov.uni-mb.si. Uredništvo revije: Kidričeva cesta 55a, 4000 Kranj, naročniški oddelek: 04 23 74 295.
Letna naročnina: za pravne osebe za prvi naročeni izvod 51,47 EUR, drugi naročeni izvod 41,38 EUR, vsak nadaljnji 36,33 EUR,
za posameznike 25,23 EUR. Cena posamezne številke je 9,08 EUR.
Na leto izidejo 4 številke. Tisk: ROLGRAF d.o.o.
Naklada 200 izvodov.
Organizacija is covered by the following services: Cabell's Directory, CEJSH (The Central European Journal of Social Sciences and Humanities), Celdes, CNPIEC, Die Elektronische Zeitschriftenbibliothek, DOAJ, EBSCO - TOC Premier, EBSCO Discovery Service, ECONIS, Ergonomics Abstracts, ERIH PLUS, Google Scholar, Inspec, International Abstracts in Operations Research, J-Gate, Microsoft Academic Search, Naviga (Softweco), Primo Central (ExLibris), ProQuest - Advanced Polymers Abstracts, ProQuest - Aluminium Industry Abstracts, ProQuest - Ceramic Abstracts/World Ceramics Abstracts, ProQuest - Composites Industry Abstracts, ProQuest - Computer and Information Systems Abstracts, ProQuest - Corrosion Abstracts, ProQuest - Electronics and Communications Abstracts, ProQuest - Engineered Materials Abstracts, ProQuest - Mechanical & Transportation Engineering Abstracts, ProQuest - METADEX (Metals Abstracts), ProQuest - Sociological Abstracts, ProQuest - Solid State and Superconductivity Abstracts, Research Papers in Economics (RePEc), Summon (Serials Solutions/ProQuest), TDOne (TDNet), TEMA Technik und Management, WorldCat (OCLC)

CONTENTS - 4/2015

Založba Moderna organizacija