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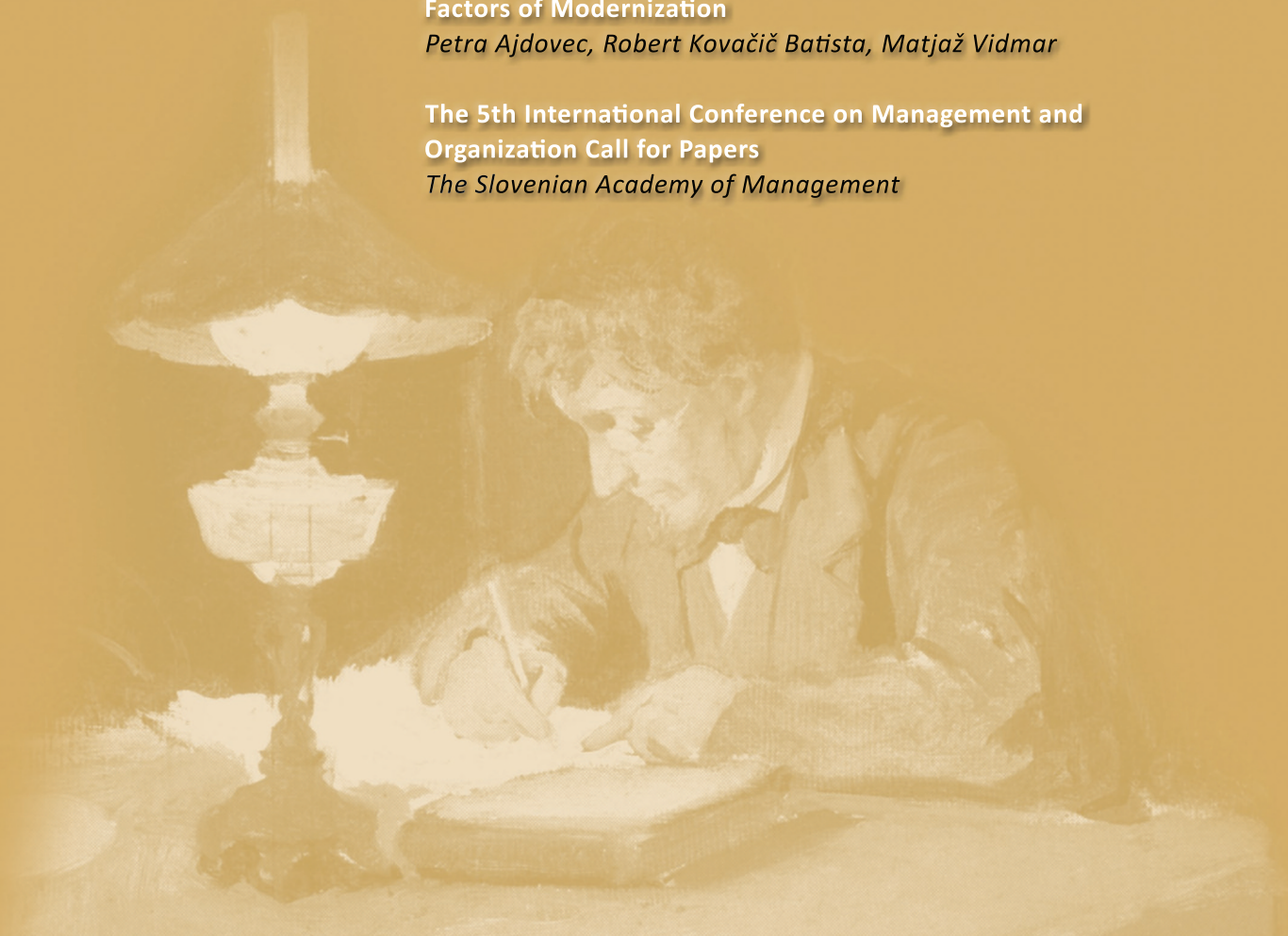

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Dynamic Relationships Management Journal

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Aims & Scope

The Dynamic Relationships Management Journal is an international, double blind peer-reviewed bi-annual publication of academics' and practitioners' research analyses and perspectives on relationships management and organizational themes and topics. The focus of the journal is on management, organization, corporate governance and neighbouring areas (including, but not limited to, organizational behavior, human resource management, sociology, organizational psychology, industrial economics etc.). Within these fields, the topical focus of the journal is above all on the establishment, development, maintenance and improvement of dynamic relationships, connections, interactions, patterns of behaviour, structures and networks in social entities like firms, non-profit institutions and public administration units within and beyond individual entity boundaries. Thus, the main emphasis is on formal and informal relationships, structures and processes within and across individual, group and organizational levels.

DRMJ articles test, extend, or build theory and contribute to management and organizational practice using a variety of empirical methods (e.g., quantitative, qualitative, field, laboratory, meta-analytic, and combination). Articles format should include, but are not restricted to, traditional academic research articles, case studies, literature reviews, methodological advances, approaches to teaching, learning and management development, and interviews with prominent executives and scholars.

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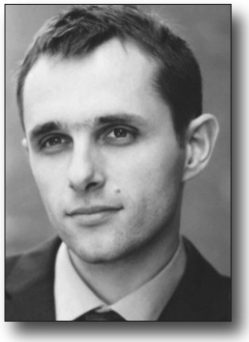

MATEJ ČERNE
University of Ljubljana

TOMISLAV HERNAUS
University of Zagreb

Volume 6, Number 1 of the Dynamic Relationships Management Journal (DRMJ) marks one year since the new editorial board took over the journal. Despite many interesting and potentially impactful articles that we have published in the previous two issues, attracting a larger number of high quality submissions covering business phenomena in different countries has been a challenge. Therefore, this has remained the highest priority for the editorial team, which we already presented as a mission in our first editorial a year ago: **"to increase the quality, quantity and international nature of submissions."**

There are many activities that the editorial board has engaged in in the past few months to **increase the visibility of DRMJ**. Perhaps the most important one has been a continued interaction with Scopus to potentially include our journal in their abstract and citation database of peer-reviewed literature. This process has now moved into the phase of detailed examination of the quality of articles published in the past two volumes of DRMJ, and hopefully we will hear back from Scopus with some positive news soon. Additionally, the editors have attended several international conferences (Strategic Management Society conference in Milan, Italy; European Association for Work and Organizational Psychology in Dublin, Ireland; European Academy of Management in Glasgow, Scotland; Academy of Management Annual Meeting in Atlanta, USA) where we have promoted our journal in editorial meetings as well as to presenting scholars potentially interested in submitting their research.

We would also like to inform our readers about two exciting new developments that aim to contribute to our mission. The first one is the aim to **publish a special issue each year**, related to a topic that is relevant, timely and theoretically important for scholars in the field of management and organization. Next year (Volume 7), this will be the second issue, and it will stem mainly from best papers presented at the 5th International Conference on Management and Organization organized by the Slovenian Academy of Management (SAM) revolving around the central theme of **Management and Organization in the Digital Society** (please see call for submissions at the end of this issue). Therefore, papers in the conference and later in the special issue of DRMJ will relate to the digital economy, digital society, digital labor, and how organizational structures and processes respond to these changes in the nature of work and in the work environment.

The second development aims to further increase the attractiveness of DRMJ, and is related to the editorial decision to introduce **the annual DRMJ best paper award**. Thus, published articles of outstanding quality will not go unnoticed. Instead, their author(s) wil receive a special recognition on the DRMJ website and a plaque denoting their achievement. We hope to further enhance the appeal of our journal this way, and potentially attract additional high-quality submissions. We will start with this initiative next year (2018), making papers published in any of the two issues in Volume 7 eligible for this award.

Turning to the papers in this issue, the first one is a study of Alenka Slavec Gomezel looking into the impact of **firm owner`s characteristics** (strong social ties, weak social ties, and entrepreneurial self-efficacy) and **firm's characteristics** (legal status, firm age, and tangibility of assets) on **small firm financing** in terms of bank loans and trade credits. It is based on a sample of 497 respondents from Slovene small manufacturing firms, and founded in the analysis using Structural Equation Modeling.

Second, the paper of Tomislav Hernaus and Ivan Matić delves into **business groups** in Croatia, and examines how their **organization design and corporate governance** differs in the private vs. public sector. Their comparative analysis contributes to better understanding of organizing practices of the largest business systems in Croatia, and offers specific insights about the divide between the private- and public-sector business groups.

The third study is reported by Nada Zupan, Ljupčo Eftimov, Katerina Jovanovska and Darko Petrovski, and looks into the **development of university graduates**. Their study is based on samples of students, professors and employers in The Republic of Macedonia and examines **joining efforts of employers and educational institutions**. Their discussion is aimed at providing suggestions on how to close the existing gaps, focusing on a closer collaboration between education providers and employers in order to improve youth competencies and employability.

The final paper of this issue addresses the buzzwords of **fourth industrial revolution** and digital transformation, and presents an article such as we would like to see in the announced special issue from the SAM conference 2018. It is written by Petra Ajdovec, Robert Kovačič Batista and Matjaž Vidmar, and is based on a **bibliometric analysis** (combining co-citation and bibliographic coupling techniques) of the field of research on the intersection of industry 4.0 (denoted by robotization, digitalization, virtualization and big data) and business/management. The key implication of their study is that the management and business research on industry 4.0 lags behind natural and technical sciences. Their findings offer promising avenues for management and organization scholars, and confirm the relevance of the forthcoming special issue of DRMJ.

To conclude, we continue our endeavor to further establish DRMJ as being THE journal of dynamic relationships management, and relate to the most timely and relevant developments in our fields. We invite potential contributors to submit their work and join us in this mission!

Matej Černe and Tomislav Hernaus

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Dynamic Relationships Management Journal

FIRM FINANCING AND GROWTH: THE INFLUENCE OF OWNER'S AND FIRM'S CHARACTERISTICS

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Abstract

The aim of this study is to investigate the impact of owner`s characteristics (strong social ties, weak social ties, and entrepreneurial self-efficacy) and firm's characteristics (legal status, firm age, and tangibility of assets) on small firm financing in terms of bank loans and trade credits. Based on a sample of 497 respondents and using structural equation modeling, research results show that weak social ties, legal status, and tangibility of assets are significantly related to small firm bank financing, whereas strong and weak social ties, entrepreneurial self-efficacy, and legal status are significantly related to trade credit use. Results also show that bank financing and trade credits are significantly related to firm growth. The paper contributes to a better understanding of determinants that are important when entrepreneurs apply for external financial resources.

Keywords: *bank financing; trade credit use; growth; owner's characteristics; structural equation modeling*

1. INTRODUCTION

Small and medium-sized enterprises (SMEs) are the engine of growth (Beck & Demirguc-Kunt, 2006) and their ability to develop and invest is crucial for any economy that wishes to prosper (Torre, Martinez Peria, & Schmukler, 2008). SMEs growth is critically related to the availability of external financial sources as new investments require substantial funds (Berger & Udell, 1998; Moretti, 2012; Qorraj, 2017). But small firms suffer from "resource poverty" (Welsh & White, 1981; Woschke, Haase, & Kratzer, 2017) and do not possess as many resources as larger firms do. Moreover, small firms suffer from constrained access to external funds which hinder their investing ability and subsequent growth (Berger & Udell, 2006; Hessels & Parker, 2013).

The awareness of economists, politicians and scholars about the importance of SMEs on national levels has led to detailed analysis about SMEs characteristics, their contribution to the economy in terms of employment and gross domestic product growth and to the awareness of financial problems that SMEs face (Berger & Udell, 2006; Winborg & Landstrom, 2001). Scholars mostly agree that small firm owners are inseparably linked to small firms' performance (Hmieleski & Corbett, 2008) and that investigating which owners and firms characteristics influence small firm financing is an important research topic. However, relations between some owner's characteristics and small firm financing remain understudied. For example, little is known about the relationship between strong and weak social ties or entrepreneurial self-efficacy and small firm financing in terms of bank loans and trade credits. There is also a lack of studies investigating the influence of some firm`s characteristics on bank loans and trade credits simultaneously. Motivated by these gaps in the literature the aim of this research is to contribute to the field by proposing a model of small firm financing through bank loans and trade credits and perform its empirical test using structural equation modeling on a robust dataset.

The paper is structured as follows. First, based on in-depth literature review I develop a conceptual model of small firm financing through bank loans and trade credits and propose research hypotheses. I continue with the explanation of the research set-

ting and methods as well as the results of hypotheses testing. Lastly, I discuss research findings, which have implications for governmental policies and for entrepreneurs themselves.

2. LITERATURE REVIEW

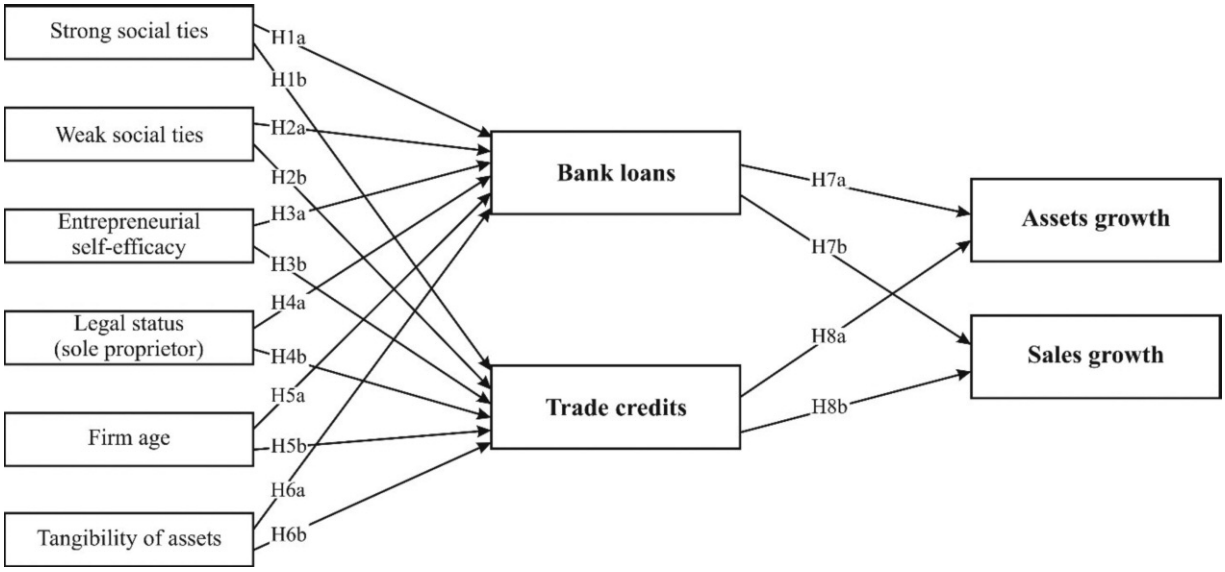
SMEs are special entities with unique characteristics; however their uniqueness often times acts as a constraint when faced with the need to gain external funds (Coleman & Cohn, 2000; Woschke et al., 2017), leading to a limited access to capital and money markets (Chaganti, Decarolis, & Deeds, 1995; Rraci, 2010). The informational opacity of small firms is undoubtedly a key factor that defines their funding (e.g. Berger & Udell, 1998; Fungáčová, Godlewski, & Weill, 2011; Hyytinen & Vaananen, 2006; Torre et al., 2008) and is also linked to informational asymmetry between owners and lenders when owners have more information than lenders about the firm, its future plans and potential (Arad, Hanson, & Schneider, 1997; Jagric & Jagric, 2011). The informational asymmetry problem arises also from the lack of publicly released information (Carpenter & Petersen, 2002) for which small firms in several countries are not obliged to and from the nonobligatory and costly revision of their financial statements that usually is not undertaken (Berger & Udell, 1998). All these peculiarities face lenders with difficulties when searching for necessary information about firms and with experiencing greater uncertainty when lending to small firms. Moreover, small firms face difficulties in signaling their creditworthiness (Scholtens, 1999) and the quality of the firm (Berger & Udell, 1998) to providers of external funds because small firms are addressed with liabilities of newness and smallness which usually imply that small and new firms have high death rates (Baum, 1996). Finally, small firms are being attributed with problems of adverse selection (Bester, 1985) and moral hazard (Berger & Udell, 1998; Drakos, 2012; Hyytinen & Vaananen, 2006). While adverse selection problems arise when the agent (the entrepreneur) has more information than the principal (the lender), moral hazard problems arise when the action undertaken by the agent is unobservable and has a differential value to the agent as compared to the principal (Darrough & Stoughton, 1986).

Although these small firms' characteristics have been a largely inspected topic and consensus is shown that they constrain small firm growth also via limited access to external financial sources, scholars argue that small firm owners are not less important for firm growth (Coleman & Cohn, 2000; Wu, Chua, & Chrisman, 2007). Yet, there is still a lack of research investigating the influence of owner`s characteristics on funding small firms through bank loans and trade credits. Prior research has predominantly focused on characteristics, such as owner`s age, gender, educational level, and years of experience (Storey, 1994; Vos, Yeh, Carter, & Tagg, 2007), however little attention has been directed to the influence of owner`s social network (strong and weak social ties) and entrepreneurial self-efficacy on bank loans and trade credits. In this research, I differentiate between strong and weak social ties as proposed by Hoang and Antončič (2003). To the author's knowledge the influence of the entrepreneurial self-efficacy on small firm financing through bank loans and trade credits has not been studied before.

Even though the influence of firm`s characteristics on bank loans and trade credits has been studied more comprehensively (e.g. Berger & Udell, 1998; Huyghebaert, Van de Gucht, & Van Hulle, 2007), there is also a lack of empirical studies that investigate the influence of various firm`s characteristics (firm's legal status, firm's age, and the tangibility of assets) on bank loans and trade credits simultaneously. Simultaneous analysis is important because of interrelated dependence relationships, which exist because firms use more trade credit when credit from financial institutions is unavailable (Petersen & Rajan, 1997). I also investigate the relationship between small firm financing and their growth in terms of assets and sales growth, because financial results are considered as one of the key measures of firms' performance (Berginc, 2014).

Building on existing findings on owner's and firm's characteristics and in-depth literature review on financing, entrepreneurship, psychology of entrepreneurs and small business management, Figure 1 presents the proposed model of small firm growth and financing through bank loans and trade credits. In what follows I elaborate the research hypotheses that describe specific relationships proposed in the model.

Figure 1: Conceptual model



2.1 Strong social ties and external financing of small firms

Walker et al. (1977) defined a social network as the set of personal contacts through which an individual maintains his social identity and receives emotional supports, material aid, services, information and new social contacts. Granovetter (1973) defined the strength of a tie as a combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie. Strong ties are established between individuals that see each other frequently, have an emotional and intimate relationship and trust each other. Family members, relatives, and close friends are representatives of an owner's strong ties network (Gimeno, Folta, Cooper, & Woo, 1997). Strong ties provide more personal information which can be trusted and at the same time reduce the need to do follow up research (Singh, 1998). Because the entrepreneur can trust the other party, it is easier to predict their behavior, avoid problems in the relationship, and better deal with them when they occur (Aldrich, 1999).

Strong social ties have been investigated from different points of view, but there is still a lack of research on the relationship between owner's strong social ties and bank loans or trade credits. Based on the literature review regarding the influence of strong social ties on financing in general, this section extends previous findings by developing the corresponding hypotheses about the influence of strong social ties on bank loans and trade credit use. Unlike large firms, small firms typically have a substantial amount of their funding provided by insiders – the entrepreneur, other members of the start-up team, family, and friends (Berger & Udell, 1998). Family and friends are crucial for funds rising, especially it is so at the start-up stage (Hutchinson, 1995; Johannisson, 2000). In this role, strong ties are seen as substitutes for bank loans and trade credits and based on that a negative relationship between strong ties on the one side and bank loans and trade credits on the other side is hypothesized. Similarly, research has shown that family firms financing decisions move toward maintaining control over firms by financing firms through equity (Wu et al., 2007). Based on this result I assume that owner`s family will help providing funds when the owner will need them because of the fear that for obtaining a bank loan firm`s owner will have to provide some collateral. Small firms, especially high-tech firms and firms with the majority of intangible assets in total assets, usually cannot provide enough collateral; therefore owner`s or owner`s family assets will have to be pledged. To prevent losses of family property, owner`s family and

friends will help in providing required funds for the firm. When strong ties provide funds, also the need to apply for trade credits diminishes. Based on this discussion, I propose that a larger network of strong social ties results in less bank loans and trade credits and propose the following hypotheses:

Hypothesis H1a: There will be a negative relationship between strong social ties and bank loans.

Hypothesis H1b: There will be a negative relationship between strong social ties and trade credits.

2.2 Weak social ties and external financing

Weak social ties refer to acquaintances, business partners, former employees, and co-workers (Bruderl & Preisendorfer, 1998). They see each other occasionally; their relation is not intimate and they do not communicate as frequent as members of strong social ties do.

Scholars predominantly agree that firms gain different advantages from networks in terms of information, knowledge, resources, and contacts, especially if they are widened in a targeted way with people who can provide resources that the firm does not possess. For example, Singh (1998) argues that social networks can improve the knowledge base of individuals by providing access to knowledge not contained by the individual. Granovetter (1973) postulated that weak ties in an entrepreneur`s social network provide more unique information. Greve and Salaff (2003) studied personal networks as the relationship between entrepreneurs and others who provide resources that are important in establishing a business. Individuals involved in a broader social network frequently access profitable exchange opportunities because they are better positioned to discover suitable exchange partners (Rangan Insead, 2000). Social networks provide entrepreneurs with avenues for negotiation and persuasion and enable them to gather a variety of information and resources (e.g. market information, ideas, solutions to problems, labor force and equipment, social support, and financial resources) held by other actors (Hoang & Antončič, 2003; Walter, Auer, & Ritter, 2006). Johannisson (2000) goes a step further asserting that personal networks provide entrepreneurs a "universal resource kit" that provide information about access to physical and financial resources besides strengthening entrepreneur`s identity and building general support.

Social relations are crucial for small firms to broaden the available sources of funds (Petersen & Rajan, 1994). Belonging to a more or less formalized network constitutes an advantage for small firms (Rivaud-Danset, Dubocage, & Salais, 1998). Especially in the start-up stage when the firm is not known and not well established, weak ties can facilitate the firm in getting loans and receiving lower interest rates on loans (Uzzi, 1999) by building their reputation and credibility also through a system of guarantees (Dollinger, 2003; Rivaud-Danset et al., 1998). Furthermore, research showed that building close and long-lasting ties with creditors is beneficial for the availability of financial resources (Cavalluzzo & Cavalluzzo, 1998; Petersen & Rajan, 1994; Severin, Alphonse, & Ducret, 2004). In doing so, creditors acquire more soft information on firms and owners, diminish their opacity, and are more likely to approve credits (Berger & Udell, 2006; Cole, 2008). The soft information garnered from past communication with firm`s owners, suppliers, customers, or neighboring businesses provide a base for assessing firms' future prospects (Berger & Udell, 2006; Petersen & Rajan, 1994). Moreover, Cole (1998) exposed that small firms are more likely to obtain an extension of credit in the presence of pre-existing transactions with potential lenders. Entrepreneurs with larger networks are more likely to apply and eventually obtain bank loans and trade credits since weak ties can benefit the entrepreneur by accessing to important information and resources that could not otherwise be acquired. Also, weak ties can put in a good word for the entrepreneur or his firm to enhance the chance for gaining financial resources. Based on this discussion, the following hypotheses are postulated:

Hypothesis H2a: There will be a positive relationship between weak social ties and bank loans.

Hypothesis H2b: There will be a positive relationship between weak social ties and trade credits.

2.3 Entrepreneurial self-efficacy and external financing

Self-efficacy refers to people's beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives (Wood & Bandura, 1989) and their capability to perform a given task (Bandura, 1997). Individuals high in self-efficacy believe that they can successfully accomplish specific tasks that they undertake (Bandura, 1997). Similarly, entrepreneurial self-efficacy refers to the strength of an individual`s belief that he or she is capable of successfully performing roles and tasks of an entrepreneur (Boyd & Vozikis, 1994; Chen, Greene, & Crick, 1998). For these reasons, individuals who consider themselves efficacious in performing entrepreneurial roles and tasks are more likely to enter the entrepreneurial environment than those who do not (Chen et al., 1998). Highly motivated and self-confident entrepreneurs are linked to higher firm`s performance (Chandler & Jansen, 1992; Khedhaouria, Gurău, & Torrès, 2015; Miao, Qian, & Ma, 2017).

Although entrepreneurial self-efficacy has been extensively studied in relation with entrepreneurial intentions, start-ups, opportunity recognition, performance and entrepreneurship in general, there is a lack of research regarding the influence of entrepreneurial self-efficacy on small firm financing through bank loans and trade credits. In this section, I summarize main findings that will facilitate me in postulating research hypotheses.

Krueger and colleagues (2000) revealed that perceived self-efficacy is correlated with perceived feasibility, which, together with global perceived desirability and propensity to act, significantly predicts intentions. Similarly, Prodan and Drnovsek (2010) showed that higher entrepreneurial self-efficacy influences intentions to establish an academic spin-off. Ozgen and Baron (2007) evidenced that self-efficacy is significantly related to opportunity recognition and that opportunity recognition is related to firm growth. An entrepreneur that offers internal rational explanations for his or her plans to start a business and has high self-efficacy, will be more likely to establish a business (Gatewood, Shaver, & Gartner, 1995). Coleman and Kariv (2014) found that higher levels of entrepreneurial self-efficacy were associated with a greater willingness to raise capital from external sources. By the same token, creditors will be more prone to lend to those entrepreneurs that are convinced of their success. Baum and Locke (2004) showed that goals, self-efficacy, and communicated vision had direct positive effects on venture growth and that venture growth was influenced by entrepreneur's self-efficacy. Other studies evidenced that entrepreneurial self-efficacy predicts new venture performance (Baum, Locke, & Smith, 2001; Hmieleski & Corbett, 2008). I propose that firms which have a highly ambitious owner who believes in his or her capacities and strives for firm`s growth are more likely to obtain bank loans and trade credits, since lenders perceive that self-efficacious entrepreneurs will be able to repay their liabilities. On the other hand, those entrepreneurs who are less self-efficacious will also apply for bank loans and ask suppliers for trade credits less frequently, again leading to a positive relation between entrepreneurial self-efficacy and bank loans or trade credits. On the basis of this discussion the following hypotheses are postulated:

Hypothesis H3a: There will be a positive relationship between entrepreneurial self-efficacy and bank loans.

Hypothesis H3b: There will be a positive relationship between entrepreneurial self-efficacy and trade credits.

2.4 Firm legal status and external financing

The prime purpose of introducing the limited liability and corporate status was to reduce the risk to an individual or group of individuals for being personally responsible for firm losses in the event of its failure (Storey, 1994). Freedman (1994) found that lack of limited liability was the main perceived disadvantage of sole proprietors since they are liable with all their personal assets. On the other hand, Channon et al. (2001) argue that for many small enterprises the limited liability pattern is of little or no practical value since lenders often insist that directors give personal guarantees in order to obtain financial support. However, Johnson et al. (1999) showed that personal liability associated with sole

proprietorships is likely to act as an inhibitor of fund raising by the owner(s), as well as making businesses less attractive to institutional investors. Additionally, Storey (2004) argues that banks view sole proprietors as more risky borrowers than other legal statuses of firms. From the bank`s point of view sole proprietors do not signalize as much credibility and creditworthiness as limited companies do. Limited liability companies will also be more likely to obtain trade credits from their suppliers. This is consistent with Petersen's and Rajan`s (1997) finding of a positive connection between firms' legal status and trade credit supply. Coleman and Cohn (2000) also found that sole proprietors use lower percentages of debt than other firms do. On the basis of this discussion the following hypotheses are postulated:

Hypothesis H4a: There will be a negative relationship between sole proprietor firm`s legal status and bank loans.

Hypothesis H4b: There will be a negative relationship between sole proprietor firm`s legal status and trade credits.

2.5 Firm age and external financing

From the lender`s point of view the age of the firm can act as a proxy for default risk (Leeth & Scott, 1989), as a proxy of experience (Elliehausen & Wolken, 1993), as a proxy for the amount of credit information available (Cavalluzzo & Cavalluzzo, 1998), as a proxy for lender information costs, and as a signal of firm's viability (Avery, Bostic, & Samolyk, 1998). Young firms usually do not have a reputation yet and are limited in using signaling devices (Scholtens, 1999). Older firms are more likely to be known and have longer and more established relationships with lenders, which makes easier for lenders to evaluate them (Bates, 1991). As a result, contract terms such as collateral requirements may be more favorable for older businesses than for younger firms (Avery et al., 1998). In addition, Beck et al. (2006) found that older, larger and foreign-owned firms report lower financing obstacles. Therefore, due to the lack of financial and business information and trade records of a newer and smaller firm, lenders are not willing to finance these firms since the risk of not being repaid back is higher. This is why young and small firms finance a smaller share of their investment and working capital with formal financial sources than large firms (Beck & Demirguc-Kunt, 2006). Additionally, Berger and Udell (1998) showed that smaller, younger, and more opaque firms borrow less from financial institutions like banks. This leads me to propose the following two hypotheses:

Hypothesis H5a: Older firms borrow more from banks than younger ones.

Hypothesis H5b: Older firms borrow more from suppliers than younger ones.

2.6 Tangibility of assets and external financing

Firm assets are an important source for insuring loan repayments. In the lending process, lenders evaluate firm`s rating scores also through the value and structure of assets which can be pledged as collateral. Collateral requirements are common terms in loan contracts, together with interest rate, maturity, size and possible covenants (Jimenez, Salas, & Saurina, 2006). Issuing debt secured by tangible assets or inventory with known values decreases information asymmetry and agency costs, making more debt available at a lower cost to small firms (Michaelas, Chittenden, & Poutziouris, 1999). Moreover, debt secured with assets reduces costs of monitoring which could be more difficult and expensive for small firms because they may not be required to disclose much, if any, information (Michaelas et al., 1999). The requirement for pledging collateral depends on the industry and on firms' asset specificity. The younger and smaller a firm, the less it is able to put up collateral (Scholtens, 1999). Since most small firms, especially microenterprises, in the establishment and development stages are perceived as risky, credit institutions ask for significant amounts of collateral for short-term loans and totally ration long-term loans to small businesses (Drakos, 2012; Hudges & Storey, 1994). Coleman and Cohn (2000) argue that lenders try to mitigate risks of lending to small firms by demanding collateral or personal guarantees. Furthermore, firms with a higher percentage of real estate, land, en-

gines and equipment that can be pledged as collateral will more often use bank loans. This is consistent with Michaelas et al.'s (1999) finding that a high fixed asset component and a high inventory level are associated with higher short term as well as long term debt.

In his study of trade credits as substitutes for bank credits De Blasio (2005) argues that firms with high proportions of intangible assets, which include R&D expenditures, patents, development and advertising costs, are more subjected to financial constraints, since intangible assets are relatively difficult to evaluate for an outside lender and cannot be used as collateral. So, to a certain extent tangible assets act as indicators of firms' creditworthiness. Asset tangibility has been found as an important determinant of a company`s ability to finance investments externally (Almeida & Campello, 2007) and an exogenous variable that determines firms' debt capacity (Dietrich, 2007). On the basis of these findings, the following hypotheses are postulated:

Hypothesis H6a: A higher percentage of tangible assets in total assets will be positively related to bank loans.

Hypothesis H6b: A higher percentage of tangible assets in total assets will be negatively related to trade credits.

2.7 Debt financing and firm growth

At some point of development and growth firms typically need to turn to external sources such as banks, public debt and equity markets (Coleman & Cohn, 2000) but they are frequently unable to grow due to informational asymmetry which results in a finance gap (Vos et al., 2007). Scientific research and public debate confirms that financial problems restrain small firms' development and growth. For example, research shows that small firms frequently face difficulties obtaining equity and debt financing which restricts their development (Moretti, 2012) whereas availability of external financing enhances their growth (Beck, Demirguc-Kunt, & Maksimovic, 2005). Storey (1994) found that bank`s decision to lend or not to lend to new firms depends not only on the expected value of the return but also on firm's growth rate, since faster growing firms are larger users of bank services than slower growing firms. Thus, growing firms need resources for financing their growth. Internally generated sources are usually insufficient; therefore, external financing is needed. Similarly, also suppliers appear to support growing, cash-constrained firms by granting them more trade credits (Petersen & Rajan, 1997). These authors also suggest that suppliers have incentives for financing customers because of future profits that can be attained if these customers grow and increase their purchases. On the basis of the above-mentioned findings the last four hypotheses are postulated:

Hypothesis H7a: Bank loans will be positively related to small firms` growth in terms of assets` growth.

Hypothesis H7b: Bank loans will be positively related to small firms` growth in terms of sales` growth.

Hypothesis H8a: Trade credits will be positively related to small firms` growth in terms of assets` growth.

Hypothesis H8b: Trade credits will be positively related to small firms` growth in terms of sales` growth.

3. METHODOLOGY

In this section, the methodology is discussed in terms of sample, data analysis, operationalization and measure validation.

3.1 Sample and data analysis

Based on the literature review a survey instrument was developed. Dillman and colleagues' (2009) tailored design method, which is a set of procedures for conducting successful self-administered surveys that produce both high-quality information and high response rates, was followed. The questionnaire was mailed to a representative random sample of top executives from 2,200 small Slovenian manufacturing firms and 497 usable responses were obtained. For all responses corresponding financial

data were obtained from firms' balance sheets and income statements, which were available through the GVIN database. The research was performed in 2009. There were 81% of males in the sample. The average respondent was 47 years old. 54% of respondents had post-secondary education.

The EQS Multivariate Software version 6.1 was used for structural equation modeling. Since a small amount of non-normality was present in the data, the structural relationships in the model of small firm financing through bank loans and trade credits were estimated using the ERLS method which minimizes the problems deriving from data skeweness and kurtosis and is otherwise comparable with the maximum likelihood (ML) method (Shane, 2004). The fit of the model was assessed with multiple indices: NFI, NNFI, CFI, GFI, SRMR, and RMSEA. Values of NFI, NNFI, CFI, and GFI greater than 0.90 indicate a good model fit (Byrne, 2006; Hair, Black, Babin, & Anderson, 2010). Hu and Bentler (1999) suggest that values of SRMR less than 0.08 indicate an acceptable fit. Values of RMSEA less than 0.05 indicate a good fit, and values as high as 0.08 represent reasonable errors of approximation in the population (Hair et al., 2010).

3.2 Operationalization and measure validation

In this research, the dependent variables bank loans and trade credits were measured with corresponding items from the firms' balance sheets. Growth was measured as the average annual growth of total assets in the period between 2003 and 2006 and as the average annual growth of the sales income in the same period (Antončič & Prodan, 2008).

Strong social ties were measured with the number of family members (partner, parents, brothers, sisters, children) and friends (people with whom the entrepreneur spends his free-time – lunches, dinners, drinks, visiting each other, sports activities, visiting social happenings) with whom the respondents talked about important matters in the last three months. Weak social ties were measured with the number of co-workers, business partners, and counselors with whom the respondents talked about important matters in the last three months. Measures for strong and weak social ties were adapted from Greve (1995). Entrepreneurial self-efficacy was measured by asking respondents to assess their perceived abilities on a 5-point Likert scale ranging from 1 (completely unsure) to 5 (completely sure) in the following entrepreneurial tasks that pertain to the attainment of important entrepreneurial effectiveness goals: conduct market analysis, expand business, find new markets, make a strategic plan, make decisions under uncertainty, perform financial analysis, set and attain profit goals, set and attain sales goals, take calculated risks, and take responsibility for new ideas and decisions. These roles/tasks were adapted from Chen and colleagues' (1998) study. Cronbach's alphas of 0.88 was above the threshold of 0.70 (Hair et al., 2010), indicating strong internal consistency of items operationalized to measure the construct. Exploratory factor analysis in SPSS 16.0 extracted one factor (N = 497; Bartlett's test of sphericity: approx. chi-square of 197,345; 45 df; sig. 0.000. Kaiser-Meyer-Olkin measure of sampling adequacy: 0.90. Variance explained: 43.0%). The factor analysis indicated that all factor loadings were above 0.5. Entrepreneurial self-efficacy was entered in the model of small firm financing through bank loans and trade credits as a latent construct.

Firm's legal status was measured with a dichotomous variable (1-sole proprietor; 0-other legal statuses, e.g. limited liability company). Firm age was measured with the number of years from the firm`s establishment to the year 2007. The tangibility of assets was measured by the share of tangible assets in total assets.

4. RESULTS

Results of model test using structural equation modeling indicated good model fit (goodness-of-fit indices: chi-square = 388.055, 125 df, probability 0.000; NFI = 0.91; NNFI = 0.91; CFI = 0.93; GFI = 0.90; SRMR = 0.06; RMSEA = 0.07). EQS reported that parameter estimates appear in order and that no special problems were encountered during the optimization. Examination of the hypotheses related to the model of small firm financing through bank loans and trade credits is presented in the following paragraphs. Structural equations with standardized coefficients are shown in Table 1.

Hypothesis H1 proposed that strong social ties would be negatively related to external financing in terms of bank loans and trade credits. While the relationship between strong social ties and bank loans (H1a) was not found to be significant, the results indicate a significant relationship between strong social ties and trade credits (H1b; a negative, significant standardized coefficient of -0.13); therefore, the results support hypothesis H1b. Hypothesis H2 looked at the relationships between weak social ties and bank loans (H2a) and at the relationships between weak social ties and trade credits (H2b). Empirical results were found in support of hypothesis H2a (a positive and significant standardized coefficient of 0.25) and hypothesis H2b (a positive and significant standardized coefficient of 0.22). Hypothesis H3 predicted that higher entrepreneurial self-efficacy would be positively related to external financing. Whereas the relationship between entrepreneurial self-efficacy and bank loans (H3a) was not found to be significant, the results indicate a significant relationship between entrepreneurial self-efficacy and trade credits (H3b; a positive, significant standardized coefficient of 0.15).

Hypothesis H4 proposed that sole proprietor as firm`s legal status would have negative influence on bank loans (H4a) and trade credits (H4b). The results presented in Table 1 indicate that sole proprietor as firm`s legal status has a significant negative influence on both bank loans and trade credits (significant negative path coefficients of -0.18 and -0.11, respectively). Hypothesis H5a proposed that older firms borrow more from banks than younger ones and hypothesis H5b proposed that older firms borrow more from suppliers than younger ones. Empirical results were not found in support of hypotheses H5a and H5b. Hypothesis H6 examined the impact of higher percentage of tangible assets in total assets on bank loans (H6a) and trade credits (H6b). Hypothesis H6a was supported and results indicate a significant positive relationship between the percentage of tangible assets in total assets and bank loans (positive and significant standardized coefficients of +0.31). Hypothesis H6b was not supported (close-to-zero and non-significant standardized coefficient of +0.02).

The last four hypotheses examined the relationship between external financing and firm growth. As indicated in Table 1 bank loans are strongly, positively, and significantly related to assets growth (H7a; standardized coefficient of +0.30) and sales growth (H7b; standardized coefficient of +0.25). While the relationship between trade credits and assets growth (H8a) was not found to be significant, hypothesis H8b was supported, since the results indicate the significant positive relationship between trade credits and sales growth (positive and significant standardized coefficients of +0.10).

Table 1: Structural equations for the model of small firm financing through bank loans and trade credits

Independent variables	**Dependent variables**			
	Bank loans	Trade credits	Assets growth	Sales growth
Strong social ties	-0.08	-0.13*		
Weak social ties	+0.25*	+0.22*		
Entrepreneurial self-efficacy	+0.06	+0.15*		
Legal status (sole proprietor)	-0.18*	-0.11*		
Firm age	-0.03	-0.02		
Tangibility of assets	+0.31*	+0.02		
Bank loans			0.30*	0.25*
Trade credits			0.04	0.10*
Error	0.92	0.96	0.95	0.96
R-squared	0.16	0.08	0.10	0.08

*Note: * Sig. < 0.05*

5. DISCUSSION AND CONCLUSION

There are several important observations for entrepreneurs, policy makers, and scholars that can be derived from the results of this study. I analyzed the influence of three owner`s and three firm`s characteristics on small firm debt financing. In this study I considered bank loans and trade credits as sources of finance for small firms. I also tested how external financial sources influence small firms` growth.

The literature review indicates a lack of research on the influence of weak social ties, strong social ties, and entrepreneurial self-efficacy on bank loans and trade credits. In this study, weak social ties were found to be the most important owner`s determinant of external financing. This is consistent with findings of those authors that demonstrated the benefits of building a wider network of acquaintances (Greve & Salaff, 2003; Hoang & Antončič, 2003; Ozgen & Baron, 2007) which can help an entrepreneur getting more useful information, new contacts, and eventually new sources of finance or at least a less constrained access to external sources for financing the start-up stage of the firm, daily business operations and growth intentions. The results of the study also imply that having a closer relationship with counselors, co-workers, and business partners increases the availability of external financial sources (bank loans and trade credits). Based on these research results, I propose to entrepreneurs to widen their social network through business clubs (e.g. Lions club, Rotery club), business associations (e.g. local, regional and national chambers, tradesmen unions), seminars, and important events. By widening their social network in a targeted way, entrepreneurs can benefit from accessing to important information and resources (including financial resources) that could not otherwise be acquired.

On contrary, the relationship between strong social ties and bank loans was not found to be significant, while the results indicate a significant negative relationship between strong social ties and trade credits. I hypothesized that members of strong ties of an individual`s social network will help in providing financial sources in the case of entrepreneur`s need. Since the results did not demonstrate a significant result for the proposed hypothesis I cannot confirm this assumption. However, a significant influence of strong ties on trade credits confirms the assumption of a negative influence between the two. Family and friends will help the entrepreneur in financing the business; therefore, less external sources will be needed.

Probably the most interesting conclusion of this study arises from the analyzed influence of entrepreneurial self-efficacy on bank loans and trade credits since this independent variable has not been analyzed before in such contexts. Results revealed that entrepreneurial self-efficacy has a positive influence on trade credits but it does not influence bank loans. These results can be explained with the fact that when lending, banks observe strict rules, measures, and procedures so not even an entrepreneur with a distinctive self-efficacy can influence an easier access to loans or on favorable borrowing terms. Consequently, an entrepreneur with high entrepreneurial self-efficacy can more effectively present his or her projects, motivation, and desire to succeed and develop the firm to suppliers since suppliers have more flexible directives when approving delays and extensions of payments. This results act as an important contribution to the literature. Entrepreneurs with a higher entrepreneurial self-efficacy will more frequently make use of trade credits which indicates that entrepreneurs, whose firms may have constrained access to credits due to their disadvantageous characteristics (e.g. newly established and young firms or fast-growing firms), must focus on increasing their entrepreneurial self-efficacy. Since entrepreneurial self-efficacy can be improved with appropriate entrepreneurial education (Chen et al., 1998; Zhao, Seibert, & Hills, 2005) I suggest entrepreneurs to participate in entrepreneurial educational programs. For the same reason, I suggest policy makers to introduce some entrepreneurial education programs in all high schools and technical faculties. Additionally, it is essential to develop appropriate entrepreneurial education programs for unemployed people.

The most important firm`s determinant and the determinant with the highest regression coefficient in the model was the asset tangibility, however this determinant was found to be significant only for bank loans. The result was not surprising since firms with more tangible assets (e.g. real estate, land, engines and equipment) which can be pledged as collateral will demand for bank loans more often. This result is

consistent with findings of different authors that also confirmed a positive influence of tangible assets on bank loans (e.g. Almeida & Campello, 2007; Berger & Udell, 2006). On the other hand, banks would rather finance those firms with more tangible assets since the risk of not being repaid back is replaced with the right of possession of pledged assets (Jimenez et al., 2006). Financing firms with more tangible assets is therefore less risky (Coleman & Cohn, 2000). Contrary, the results show a non-significant relationship between suppliers' trade credits and tangible assets.

This study also supports findings of other scholars that have focused their attention to the influence of firm`s legal status on small firm external financing (e.g. Coleman & Cohn, 2000; Petersen & Rajan, 1997; Storey, 2004). Results show that sole proprietors borrow less from banks and suppliers. The main constrain that sole proprietor face is the lack of creditworthiness as they do not signalize as much credibility as limited companies do. This leads me to suggest entrepreneurs to transform firm's legal status from sole proprietor to a limited liability company in order to facilitate the access to bank loans and trade credits. I found no statistically significant influence of firm`s age on small firm financing through bank loans and trade credits even though some scholars reported that this relationship exists (Coleman & Cohn, 2000; Severin et al., 2004).

This study also reveals that external financing is an important determinant for small firm growth. Bank loans permit larger investments and the positive relationship between bank loans and assets` growth is reasonable. Moreover, both bank loans and trade credits positively influence sales` growth and assets` growth.

However, future research should dig more into these relationships and investigate which other owner's and firm's determinants interplay with external firm financing and growth. For example, it would be interesting to see how owner's coping strategies impact decisions to get external financing and how on the other hand such strategies impact firm growth (Drnovšek, Örtqvist, & Wincent, 2010). Motivation plays a considerable role in firm performance and investigating how motivational factors such as greater business achievement, independence, intrinsic factor and job security (Stefanovic, Prokic, & Rankovic, 2010) impact firm financing and growth. Another avenue for future research would be exploring how business excellence, a motive power that drives people to achieve top results (Meško Štok, Markič, Bertoncelj, & Meško, 2010), impacts availability of bank loans and trade credits.

Despite certain limitations of this study (single-item measures for some of the variables, the cross-sectional nature of this study, and single country sample) the research results show that greater emphasis should be put on the topic of the firm's and owner's characteristics as determinants of small firm financing.

EXTENDED SUMMARY / IZVLEČEK

Namen študije je raziskati vpliv podjetnikovih lastnosti (močne socialne vezi, šibke socialne vezi in podjetniška samoučinkovitost) ter značilnosti podjetja (pravni status – samostojni podjetnik ali pravna oseba, starost podjetja in opredmetenost osnovnih sredstev) na financiranje majhnih podjetij preko bančnih posojil in dobaviteljevih odlogov plačil. Na podlagi vzorca 497 anketiranih podjetnikov in z uporabo strukturnega modeliranja enačb rezultati raziskave prikazujejo, da so šibke socialne vezi, pravni status in opredmetenost osnovnih sredstev pomembno povezana z višino bančnih posojil, ki jih majhna podjetja izkazujejo v svojih bilancah stanja. Rezultati študije tudi kažejo, da so močne in šibke socialne vezi, podjetniška samoučinkovitost ter pravni status podjetja statistično značilno povezani z večjo uporabo dobaviteljskih odlogov plačil za blago. Nenazadnje pa študija osvetli tudi pomen zunanjega financiranja za rast majhnih podjetij, saj se je izkazalo, da tako bančni kot dobaviteljski krediti pozitivno vplivajo na rast majhnih podjetij. Študija tako prispeva k boljšemu razumevanju dejavnikov, ki so pomembni, ko podjetniki zaprosijo za zunanje finančne vire in posojilodajalcem sporoča njihova pomembno vlogo pri rasti majhnih podjetij.

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ORGANIZATION DESIGN AND CORPORATE GOVERNANCE OF BUSINESS GROUPS: A COMPARISON OF THE PUBLIC AND PRIVATE SECTOR

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Abstract

Business groups are large inter-organizational entities that significantly contribute to economic activities worldwide. While being a highly relevant form of business organization in many emerging nations (Hoskisson, Johnson, Tihanyi, & White, 2005), they are still well represented in some of the post-socialistic countries. For instance, private- and public-sector (state-owned) business groups in Croatia account for a one third of the GDP (Lider, 2011) and play a very important role in the development of the national economy. However, we know very little about the corporate strategy, governance processes and organizational structure applied within business groups, especially given the fact that business groups around the world vary considerably (Khanna & Yafeh, 2007). Therefore, the aim of the paper is to examine how business groups in Croatia are organized and managed. A comparative analysis of the largest business groups listed by the Croatian Chamber of Commerce offers useful insights about their level of diversification, group configuration and board structure, as well as regarding the organizational architecture of their holding company, the current level of the group internationalization, and the business group-level performance. The results clearly show similarities and differences present between private- and state-owned business groups of interest. Thus, the paper contributes to better understanding of organizing practices of the largest business systems in Croatia, and offers specific insights about the divide between the private- and public-sector business groups.

Keywords: *business groups, organization design, corporate governance, private vs. public*

1. INTRODUCTION

Business groups of varied types are still influential in the early twenty-first century in a considerable number of emerging and mature industrial nations (e.g. Colpan, Hikino, & Lincoln, 2010). Representing a set of legally independent but formally related companies they are dominant organizational form for managing large businesses outside North America (Yiu, Lu, Bruton, & Hoskisson, 2007). Business groups are intriguing and enduring phenomenon largely dependent on country's political, legal and institutional arrangements. They have flourished under all sorts of institutional and policy regimes (Schneider, 2010) and manage to wield considerable market power and influence (Khanna & Palepu, 1999; Khanna & Yafeh, 2010). Despite of their longevity, business groups have to change if they want to survive and be successful within the competitive and global business environment.

Research on business groups has commonly utilized a comparison research strategy (Delios & Ma, 2010). Comparison was made primarily between business group affiliated firms and non-business group affiliated firms (e.g., Khanna & Rivkin, 2001; Peng & Delios, 2006), although business groups

were, most recently, also compared to multinational firms (e.g., Bucheli, 2010). In addition, other comparison approaches explore how the institutional environment and/or internationalization process influenced their strategy and performance (e.g., Beamish, Delios, & Lecraw, 1997; Lee, Peng, & Lee, 2008). However, still not enough emphasis has been put on the comparison of private- and state-owned business groups, especially within the Central and Eastern European business context.

Therefore, the aim of the paper is to examine how business groups in Croatia are organized and managed. A comparative quantitative analysis of the largest business groups was conducted to reveal similarities and differences in internal functioning of private- and state-owned business groups. T-test statistics provided useful insights about their strategic (e.g., level of diversification), governance (e.g., board structure), organizational (e.g., holding company structure) and financial performance characteristics (e.g., business group-level performance).

The paper contributes to better understanding of organizing practices of the largest business systems in Croatia by pinpointing the main differences between private- and public-sector business groups. We have focused on the organizational design issues and subsequent performance of business groups. By putting upfront this highly relevant applied research topic, we hope it will encourage and motivate scholars to delve with the understudied phenomenon of business group design.

2. THEORETICAL BACKGROUND AND RESEARCH HYPOTHESES

2.1. Definition of business groups

Business groups can be defined as network of legally independent firms, operating in diverse industries, with a common owner, and coordinated through multiple formal and informal ties (Khanna & Yafeh, 2007). They represent coalitions of firms, bound together by varying degrees of legal and social connection, that transact in several markets under control of a dominant or core firm (Granovetter, 1995). Although often understood as synonyms, business groups in emerging economies are different from conglomerates of the advanced countries as they did not grow out of search for financial diversification, but instead came out with the ability to set up new business ventures across variety of industries quickly and at low cost. Already Strachan (1976) explained that within business groups there are personal and operational ties among member firms (e.g., common ownership, directors, products, financial, or interpersonal; cf. Yiu et al., 2007), oppose to typical conglomerate where only few similar ties exist. As such, business groups are particular organizational forms with several defining characteristics: (1) all member firms are separate legal entities, (2) existence of stable and long-term ties between member firms, and (3) managerial coordination, administrative and financial control are provided by parent (holding) company (Locorotondo, Dewaelheyns, & Van Hulle, 2012).

Business groups recently produced a substantial academic interest, due to their presence and importance for many less developed and emerging countries. However, business group-related insights are still fragmented with several blind spots in the literature. For instance, existing research do not provide comprehensive and integrated coverage of crucial business groups' governance issues. While it offers areas of consensus (for more details see Carney, Gedajlovic, Heugens, Van Essen, & Van Oosterhout, 2011), there are also certain areas of disagreements. Disagreements are related to generally positive or negative net economic and social effects of business groups, business groups' performance and performance implications, as well as institution-level variables and strategies of business groups' affiliates. Hence, Yiu et al. (2007) conclude that future research on business groups need to explore the relationship between structural configurations of business groups and various strategic choices, and how interactions between strategy and structure give rise to competitive advantage at both business group-level and affiliate-level. Namely, interrelatedness among business groups' corporate strategies, corporate governance and structural (including people) arrangements are to dominate future business groups' research efforts.

Along the same line, we lack knowledge about sector-specific characteristics of business groups. As public-sector organizations are more than ever before heavily criticized and under constant pressure

to improve their productivity and reduce their costs, private-sector know-how is considered the only viable alternative in an attempt to achieve greater efficiencies (e.g., Brown, 2004; Desmarais, 2008). Thus, it seems both highly relevant and practically useful to examine and compare the most important strategic, governance, organizational and financial characteristics of private- and state-owned business groups.

2.2. Strategic characteristics of business groups

Strategic management of business groups is very challenging activity as holding (parent) company needs to orchestrate several legally independent (daughter, sister or subsidiary) companies. Similar to multinational or multidivisional companies, business groups should have a corporate (group) strategy that will address interconnections among various businesses and try to achieve synergistic effects at the group-level. According to Ramachandran et al. (2013), one of the most difficult challenges business groups are facing is the coordination of strategies across affiliates to avoid group being little more than portfolio of stocks, due to the affiliates' legal independence, industry specialization and autonomous allocation processes. Related to this, Kerr and Darroch (2005) emphasize the difficulty of mastering undeniable challenges of managing disparate operations, such as those in business groups, and state that corporate strategy in these circumstances is practiced along three dimensions: (1) influencing on structure and horizontal relationships, (2) sharing of common resources in a vertical relationships and (3) managing the changing contents of the portfolio forms. Evidently, the choices related to corporate strategy, at the business group-level and the affiliate firm-level, need to be made with respect to complex strategy-structure interactions at various levels of governance in business groups.

Despite mentioned crucial importance and difficulty of choosing group's corporate strategy and coordination of various sub-strategies, in literature there is still a lack of studies focused on strategy choices of business groups, and especially the dearth of research on the effects of affiliation itself on affiliates' chosen strategy. Carney et al. (2011) state that, for example, affiliates' strategies are likely to differ from those of standalone firms on at least three dimensions: (1) leverage (business groups' affiliates make greater use of debt financing than non-affiliates), (2) diversification (business groups' affiliates engage in more unrelated diversification than other firms), and (3) internalization (business groups' affiliates are less internationally oriented as oppose to non-affiliated firms).

The literature is largely silent on the important questions of whether business groups make distinctive strategic choices (Carney et al., 2011). However, bearing in mind that one of the main characteristics of business groups are their diversification efforts, most of the business group research has focused on analyzing their diversification strategy (Cuervo-Cazurra, 2006). We can recognize two main strategic options: related diversification and unrelated diversification. Business groups might diversify into several unrelated industries rather than focus on one specific industry, or enter into related businesses to get advantage of group-developed capabilities (Coplan & Hikino, 2010). Diversified business groups mostly relate to the issue of administrative arrangements and strategic choices, while pyramidal business groups are concerned with ownership arrangements and the control apparatus (Coplan & Hikino, 2010). As some authors argue for (e.g. Campa & Kedia, 2002; Laeven & Levine, 2007) and against (e.g., Khanna & Palepu, 1999; Ramachandran, Manikandan, & Pant, 2013) the "diversification discount", it seems interesting to explore how diversification strategy choice manifests across different ownership types.

Another strategically-relevant issue is the number and geographical dispersion of member firms (i.e. daughter or dependent companies) within a business group. Very often such large business systems consist of numerous legally independent parts. Median size of group-affiliated firms ranges from 1.0 in Turkey up to 18.7 in Chile. However, the majority of business groups in other emerging countries have somewhat between 2.3 and 4.4 group-affiliated firms (Khanna & Yafeh, 2010). Business group size is closely related to the extent of horizontal diversification and vertical integration. Former addresses the economy of scale and scope, with a particular focus on the geographic diversification. Internation-

alization strategies have been recently emphasized as an important research topic (e.g., Castellacci & Mahmood, 2015).Thus, some business groups have affiliated firms across different countries (similar logic and role as subsidiaries of multinational corporations). The latter may be driven by transaction-costs considerations (such as within the banking and insurance industries; c.f. Khanna & Yafeh, 2010), or stimulated by advantages that come out of a low resource dependency, technological capabilities or improved coordination (e.g., Buzzel, 1983). As state-owned enterprises and public-sector business groups started to increasingly compete internationally with private-sector counterparts (e.g., Kowalski, Buge, Sztajerowska, & Egeland, 2013), it might be that ownership type is no longer a differentiator. Thus, we propose the following hypothesis:

H1: Private- and state-owned business groups have similar strategic characteristics.

2.3. Corporate governance in business groups

There is a pervasive need for governance mechanisms in the configuration and administration of a wide array of business group activities. Corporate governance, defined as a system by which companies are directed and controlled (Fama & Jensen, 1983), plays an important role in defining business group processes. The starting point in corporate governance is the issue of ownership. Business group's ownership structure, through relationships between majority and minority owners and relationships between owners and managers, along with the level of transaction costs, determines overall group's corporate governance (Yiu et al., 2007). According to Cuervo-Cazzura (2006), agency theory emphasizes that problems arise as a result of managers seeking to fulfill their own objectives rather than those of shareholders, unless shareholders control managers through corporate governance mechanisms (Fama & Jensen, 1983), where these mechanisms provide owners with only indirect control of managers.

Specifically, corporate governance mechanisms can be understood as: (1) internal – role and function of ownership structure, boards of directors, CEO duality, directors and executive compensation; and (2) effectiveness of the managerial labor market, the market for corporate control, and government regulations (Fan, Lau, & Wu, 2002). Additionally, Cuervo-Cazzura (2006) offers a brief overview of most important issues related to ownership-governance relationship across his ownership-related typology of business groups (see Table 1). Different ownership types provide different agency problems. For example, ownership-corporate governance relationship results in the largest agency problems in state-owned business groups, as opposed to those family-owned, where agency problems are the smallest ones. Consequently, the ownership structure of business groups is the key driver of organizational capacity that continuously sense and seize opportunities, proactively renew its resource base (Teece, 2007), determine organizational longevity and lead to sustained excellence (Ramachandran & Manikandan, 2012).

Lorsch and MacIver (1989) characterized governance as the board's duty to govern the firm, with its primary role exercising power over the top management team and employees. Thus, the structure and composition (number) of board members should also be a relevant corporate governance issue. Board of directors or corporate boards are critically important institutions to the success of business firms (Nadler, Behan, & Nadler, 2006). They are responsible for the governance of their companies (Tihanyi, Graffin, & George, 2014). The size of the board structure makes a difference. While smaller boards have definite advantages over large boards, according to Carter and Lorsch (2004), an individual board's circumstances should determine the appropriate number of directors. Same authors believe that six to eight board members are sufficient for smaller or less complex companies. Within the Croatian business context, these numbers might be even smaller proportionally to their size difference.

Finally, the existence of certain guidelines or principles for corporate governance is recommendable and in some countries obligatory. By formalizing corporate governance reporting and good practices the level of transparency will increase. The OECD has published Principles for corporate governance in 1999, which have been updated in 2004 and revised in 2015. The OECD principles provide an

Table 1: Agency problems by ownership types of business groups

Structure		State-owned	Private	
			Family-owned	Widely-held
Ownership	Actor	Citizens	Dispersed shareholders	Dispersed shareholders
	Objective	Provision of goods and service objectives	Wealth, growth, interdependence objectives	Wealth objectives
Management	Actor	Politician or professional manager appointed by politicians	Family or professional manager appointed by family	Professional manager appointed by board, which is controlled by managers
	Objective	Power objectives	Wealth, growth objectives	Growth, influence objectives
Control	Actor	Politicians	Family	Manager or managers of other widely-held firms
	Objective	Power (votes/support), development, employment objectives	Wealth, growth, independence objectives	Growth, influence objectives
Owner-manager agency problems	Problem	Largest separation of ownership and control. Owners do not control managers through corporate governance mechanisms. Politicians, not owners, control managers.	No separation of ownership and control. Owners are managers or owners have large control over managers. Effective corporate governance, but potential expropriation of minority shareholders.	Separation of ownership and control. Owners imperfectly control managers through corporate governance mechanisms.
	Outcome	Multiple objectives, change of objectives with change of politicians, very difficult/costly access to equity	Alignment of objectives, easier/cheaper access to equity	Separation of objectives, imperfect alignment with incentives/governance, difficult/costly access to equity

Source: Cuervo-Cazzura, 2006, p. 426.

indispensable and globally recognized benchmark for assessing and improving corporate governance (OECD, 2016). Corporate governance principles in general facilitate companies' access to capital for long-term investment and helps ensure that shareholders and other stakeholders who contribute to the success of the corporation are treated fairly. As corporate governance rules and practices have improved in many countries and companies (OECD, 2016) such step forward might be made as a consequence of applying aforementioned governance standards.

Since 2011 Croatian Financial Services Supervisory Agency publishes the Annual Report on Corporate Governance, thus aggregately presenting the level of corporate governance reached by issuers whose securities are admitted to trading on the regulated market in the Republic of Croatia. Together with Zagreb Stock Exchange, the Agency had also developed the Corporate Governance Code that is obligatory for companies and business groups listed on the stock market. While both some private- and state-owned business groups are publicly listed, a lot of them are not. Nevertheless, we do not expect that differences in governance practices exist between (non-)listed private- and state-owned business groups. Therefore, we propose the following hypothesis:

H2: Private- and state-owned business groups have similar governance characteristics.

2.4. Structural configurations of business groups

The structure of business groups varies largely depending on the contexts in which they operate. Bearing in mind that diversification is the main characteristic of business groups, as they develop and grow by entering to various related and unrelated businesses, structural arrangement of these groups are tailor-made to promote their related and unrelated business expansion. As a result, the literature is highly focused on diversification strategy offering forms that best fit diversified firms, but still fails to deliver organizational form which will agreeably apply to the loosely coupled structures so characteristic of most business groups (Kock & Guillén, 2001).

Business groups' structural configurations are being arranged largely as a hybrid structure. In this regard, Keister (1998) states that structure of business groups varies widely among contexts, from vertical or horizontal organization and development across industries (Japan's *keiretsus* and *zaibatsu*), uniform vertical organization (Korean's *chaebol*), loose integration of small entities (Taiwan's *guanxi giye*), to large multi-industry entities with strong ties to the state (Chinese business groups). Being relatively close to multidivisional structure, business groups usually take G-form of structure where holding company, often unlisted, holds equity stakes in several independently-listed affiliates (Ramachandran et al., 2013). As such, they show seemingly similar, but in essence, different structural characteristics when compared to multidivisional organizations, mainly reflected in excessive unrelatedness.

According to Ramachandran et al. (2013), business groups are characterized by legal independence of affiliates and higher level of involvement between ownership and top management, which lead to: (1) greater autonomy in decision making of affiliates' top management, (2) greater latitude of every affiliate to tailor its performance measurement systems to its distinctive needs, and (3) independence of each affiliate in retaining and raising capital, all of which inspire greater entrepreneurship and exploiting opportunities in many unrelated business, back-upped by the access to highly diverse resources of daughter companies. On the other hand, Cuervo-Cazzura (2006) states that business groups are an organizational form that falls in between market and hierarchy extremes and can be considered as being type of firm network (widely-held, state-owned, family-owned), but not all types of firm network are business groups (e.g. supplier, distribution, strategic and geographic networks).

Business group's parent (holding or headquarters) company plays a crucial role in setting the pace and direction, as well as providing the most important efforts and decisions related to group's functioning. It represents an important moderating and mediating effect of governance procedure among member firms (Boyd & Hoskisson, 2010). In this sense, Kerr and Darroch (2005) emphasize that top management of the business group needs to clearly establish, communicate and implement means by which the corporate level will add value to the underlying businesses. In doing so, managerial (strategic) choices need to be made with the aim of groups' and affiliates' adaptation to their external environment with appropriate group structures, all of which need to produce more or less desirable business performances. Two influential characteristics of potential headquarters' effectiveness are organizational structure and size. Business group size is widely viewed as important factor explaining group performance (Carney et al., 2011). Larger business groups in general might be over-complex thus being too big to manage (Hill, 2015). Similarly, although extensive holding companies might offer a wider spectrum of services, they can also represent the administrative burden and cost center.

On the other hand, in line with the contingency theory of organizations (e.g., Donaldson, 2001), structural choices and board members' responsibilities should follow the chosen strategy. Functional division of labor in which top management specializes in an executive role such as monitoring and administering the operating divisions is only one of the possible design options. Both divisional (product or geographic) and hybrid structures are applicable as well, depending on the strategy choice. If there is a misalignment between group strategy and holding company structure, the group performance will suffer. Led by the well-known structural rigidity of public organizations (e.g., Aucoin, 1997; Bozeman, 1981), and by the recent trend of the globally rising size of the public-sector employment (OECD, 2015),

we expect to find differences in organizational characteristics between private- and state-owned business groups:

H3: Private- and state-owned business groups have different organizational characteristics.

2.5. Business group performance

Finally, we wanted to examine the performance implications of different business group ownership types. According to Khanna and Palepu (1999), business groups can add value in different ways. First, they use funds and management talent from existing operations to start new ventures. Second, business groups also substitute for labor market institutions. Large companies can create their own internal market for managers. Third, groups create value by developing a common group brand that stands for world-class quality and customer service. Not every group adds value in the same way, and no group can hope to fill every institutional void (Khanna & Palepu, 1997). For instance, diversified groups can add value by acting as intermediaries when their individual companies or foreign partners need to deal with the regulatory bureaucracy (Khanna & Palepu, 1997).

Scholars have found evidence that business groups offer positive performance outcomes (e.g., Almeida & Wolfenzon, 2006; Chang & Hong, 2000). For instance, Khanna and Rivkin (2001) reported that business groups and group affiliation indeed affect the broad patterns of economic performance. Specifically, they revealed that membership in a group raises the profitability of the average group member in various markets. A decade later Lintvedt (2012) confirmed their findings showing that the superior performance of group-affiliated firms vis-à-vis independent enterprises is related to their greater capabilities in terms of human capital, access to finance, as well as technology and innovation. However, the evidence concerning business group financial performance has primarily been drawn from studies at the affiliate rather than the group level (Carney et al., 2011). We still lack comparative studies about group-performance effects of private- and state-owned business groups. As private-sector organizations are in general much more effective than public-sector counterparts, we expect that similar is valid within the business group context. Therefore, we propose our fourth hypothesis:

H4: Private business groups have better performance results than state-owned business groups.

3. METHOD

A desk-research study targeted at the inter-organizational level was conducted on the sample of large business systems in Croatia. Top 40 business groups according to total revenue amount (listed by the *Lider* magazine) were thoroughly examined. Initial data were collected from the published magazine report. However, we have also conducted a multi-source content analysis of the official web sites of sampled organizations, the official documents published from the Zagreb Stock Exchange, and data extracted from the Business registry developed and provided by the Croatian Chamber of Commerce, respectively. Applied source triangulation technique resulted in minor data adjustments. Nevertheless, certain data inputs for some business groups were still not available, thus creating minor missing value problems in the data analysis process.

We analyzed strategic, governance, organizational and financial aspects of business groups. Specifically, after total sample analysis, we have clustered business groups according to their ownership type (i.e. private, state-owned, and hybrid). In addition, business groups have been differentiated according to the corporate strategy (i.e. related or unrelated diversification), organizational size (i.e. number of employees and number of member firms within a group), corporate governance practices, international orientation, and holding company structure. Finally, certain performance data have also been analyzed (i.e. total group revenue and revenue per employee).

Sampled business groups are heterogeneous in nature covering different industries, being different in size, as well as in terms of financial performance. The majority of business groups is privately-owned (65.0%), having less than 10 member firms (62.5%) and encountering more than 10.000 employees (75.0%). However, only a half of the examined busi-

ness groups have implemented the Corporate governance code (50.0%), and just a quarter of the sample pursues the unrelated diversification strategy (25.0%). Almost four out of five business groups have less than five board directors. Because the ownership structure of only three business groups is mixed, we decided to differentiate private- from non-private (public-sector) business groups (i.e. state-owned and hybrid ownership combined). A complete business group description for total sample and subsamples is provided in Table 2.

4. RESULTS

The relationships between business group characteristics of private- and public-sector organizations were initially examined on the total sample of organizations. Table 3 shows bivariate correlation coefficients among different strategic, governance, organizational and financial characteristics. Interestingly, intra-group characteristics were not significantly related, except in the case of strategic characteristics. However, certain positive and negative relationships have been recognized. For instance, number of member firms within the group were positively related with total number of employees ($r = .577$, $p < .01$, $N = 40$) and total group revenue ($r = .550$, $p < .01$, $N = 40$), but negatively related with diversification strategy ($r = -.446$, $p < .01$, $N = 40$) and size of the headquarters ($r = -.504$, $p < .01$, $N = 28$). Positive relationships have been also revealed between Corporate governance code and holding company structure ($r = .490$, $p < .01$, $N = 31$),

Table 2: Business group characteristics

Business group characteristic		Total sample (N=40)		Private sample (N=26)		Non-private sample (N=14)	
		M	SD	M	SD	M	SD
Strategic	Number of member firms	12.1	12.5	12.3	14.3	11.6	8.8
	International orientation (number of international members)	4.4	7.8	24.5	28.5	19.4	26.6
	Diversification strategy Related Unrelated	 77.5% 22.5%	-	 76.9% 23.1%	-	 78.6% 21.4%	-
Governance	Ownership type Private State-owned Hybrid	 65.0% 27.5% 7.5%	-	-	-	-	-
	Number of board members	3.3	1.9	3.4	2.1	3.2	.9
	Corporate governance code Yes No	 50% 50%	-	 50% 50%	-	 50% 50%	-
Organizational	Number of employees	4,794.6	6,124.3	3,357.7	6,142.1	7,463.2	5,307.8
	Headquarters' size	43.1%	-	43.7%	-	42.3%	-
	Holding structure Functional Product Hybrid	 67.7% 3.3% 29.0%	-	 68.4% 0.0% 31.6%	-	 66.7% 8.3% 25.0%	-
Financial	Total group revenue	4.354,50	5.910,43	3,803.6	5,199.4	5,377.6	7,146.8
	Revenue per employee	1.6	1.6	2.0	1.7	.7	.5

number of board members and total group revenue (r = .646, p < .01, N = 33), number of board members and holding company structure (r = .426, p < .05, N = 28), number of board members and total number of employees (r = .496, p < .01, N = 33), total number of employees and total group revenue (r = .818, p < .01, N = 33), and between total group revenue and holding company structure (r = .418, p < .05, N = 31). Statistically significant negative relationship was additionally present between total number of employees and revenue per employee (r = -.342, p < .01, N = 40).

Next, business group characteristics were compared across private- and non-private (state-owned) subsamples by using independent samples t-tests. Although we checked for four nominal grouping variables (Ownership type, Diversification strategy, Corporate governance code, and holding company structure), our hypotheses testing was based on the ownership type. As clearly seen from Table 4, strategic characteristics of private- and state-owned business groups were not statistically different. Therefore, our first hypothesis that private- and public-sector business groups have similar strategic characteristics is confirmed. The same conclusion was made for governance characteristics, as number of board members and practice of using Corporate governance code is commonly used within Croatian business groups despite of ownership structure differences (second hypothesis is accepted).

While public-sector business groups are larger in the number of total employees, their headquarters' size (share of employees employed at headquarters) is similar and not statistically significantly different. They also seem to use similar holding company structures (predominantly hybrid ones), so we had to reject our third hypothesis as we have not found differences in their organizational characteristics.

Finally, our data clearly show that private-sector business groups are much more efficient than their public-sector counterparts. While total group revenue does not differ significantly across sectors, revenue per employee is almost three times higher in the public business groups. Thus, we were only able to partially accept our fourth hypothesis.

Table 3: Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11
1	Number of member firms	1										
2	International orientation	.320*	1									
3	Diversification strategy	-.446**	-.001	1								
4	Ownership type	.051	.016	-.017	1							
5	Number of board members	.360*	.078	.131	.036	1						
6	Corporate Governance Code	.265	.266	-.180	.119	.314	1					
7	Total number of employees	.577**	-.126	-.258	.313*	.496**	.173	1				
8	Headquarters' size	-.504**	.054	.428*	-.058	-.006	-.220	-.264	1			
9	Holding company structure	.404*	.183	-.218	.118	.426*	.490**	.249	-.134	1		
10	Total group revenue	.550**	-.019	-.132	.248	.646**	.292	.818**	-.195	.418*	1	
11	Revenue per employee	-.254	-.108	.022	-.345*	-.140	-.033	-.342**	.299	.225	-.107	1

*Note: * p < .05; ** p < .01*

Table 4: Mean values and differences across business groups

	Ownership type			Diversification strategy			Corporate Governance Code			Holding company structure		
	Private	State-owned	p-value	Related	Unrelated	p-value	Yes	No	p-value	Functional	Hybrid	p-value
Number of member firms	12.35	11.57	.855	9.10	22.33	.004**	15.35	8.80	.099	8.25	22.89	.004**
International orientation	24.5%	19.4%	.582	22.7%	22.8%	.996	30.0%	15.5%	.097	16.5%	33.1%	.136
Related diversification Unrelated diversification	76.9% 23.1%	78.6% 21.4%	.908	77.5%	22.5%	-	70.0% 30.0%	85.0% 15.0%	.268	85.0% 15.0%	67.0% 33.0%	.343
Private business groups State-owned business groups	65.0%	35.0%	-	64.5% 35.5%	66.7% 33.3%	.908	65% 35%	65% 35%	1.000	60% 40%	67% 33%	.743
Number of board members	3.38	3.17	.758	3.44	2.88	.468	3.83	2.67	.075	3.06	4.67	.038*
Corporate governance code	Yes 50.0% No 50.0%	Yes 50.0% No 50.0%	1.000	Yes 45.2% No 54.8%	Yes 66.7% No 33.3%	.267	50%	50%	-	Yes 40% No 60%	Yes 88.9% No 11.1%	.013*
Total number of employees	3,357.69	7,463.2	.042*	3,954.97	7,686.78	.108	5,843.75	3,745,50	.284	4,829.70	8,160.78	.367
Headquarters' size	43.7%	42.3%	.915	49.4%	14.3%	.023*	36.7%	50.5%	.765	44.3%	36.8%	.605
Holding functional structure Holding hybrid structure	63.2% 31.6%	66.7% 25.0%	.990	68.0% 24.0%	50.0% 50.0%	.239	47.1% 47.1%	92.9% 7.1%	.004**	69.0%	31.0%	-
Total group revenue	3,803.58	5,377.64	.429	3,939.94	5,782.44	.417	6.058,00	2.651,00	.072	3,491,00	9,407.33	.025*
Revenue per employee	2.04	.70	.001**	1.59	1.51	.894	1.52	1.62	.840	1.20	1.70	.208

*Note: * p < .05; ** p < .01*

5. DISCUSSION AND CONCLUSION

This study is focused on large business systems in Croatia. Similarities and differences among business groups of different ownership type have been revealed. Private- and public-sector business groups were quantitatively compared along their strategic, governance, organizational and financial aspects, where t-test statistics clearly showed that they are more similar than expected. The research topic is highly relevant for the Croatian environment, as its national economy has been going through transition to open market economy for the last two decades. During this transition period, the challenge of defining the rules of the market game was one of the most im-

portant for this young, newly formed country and its institutions.

Bearing in mind a very fruitful context of Croatian economy for business groups, such networks of legally-independent firms emerged, evolved, and some of them declined, due to the ever changing legal, political and intuitional conditions in the country. An important accelerator for the emergence of business groups was several privatization rushes. In these periods multitude of large socialistic dinosaur-like systems and firms were broke-down to smaller parts and privatized, often resulting with emerging and growing business groups. Such transformation of Croatian economy has been done while trying to get closer to business role models from the Western economies, with the ultimate goal of achieving greater efficacy and effectiveness. On the other hand, certain portion of mentioned large-scale business systems and firms resisted privatization rushes and remained under the state ownership, often in a form of a business group. Finally, a new force in the form of new, privately-owned business groups emerged in the economy and has taken the central market role both in terms of size and various power levers.

As Croatian institutional, political and economic conditions are still largely in favor of business groups, we decided to thoroughly examine the current state of business group affairs. While private-sector groups cover almost two thirds of the top 40 examined national business groups, state-owned business groups have a decent one third share on the ranking list. Interestingly, strategic characteristics of business groups do not differ much between the sectors. Although private business groups have somewhat larger number of member firms that are located abroad, less than a quarter of them apply unrelated diversification strategy, similar to their state-owned counterparts. Governance practices of examined business groups also do not differ much. It seems that private- and public-sector business groups have almost equal boardroom size and a half of each subsample manage the affiliated companies by following the Corporate governance code.

We expected that ownership type would make a difference related to organizational and financial characteristics of business groups. However, we have found differences only regarding their financial indicators. Our data confirmed that private business groups use their workforce more efficiently than state-owned ones. Yet, neither holding company structure nor headquarters' size contributes to such distinctive performance results. Although it is widely believed that larger business groups enjoy performance enhancements that smaller groups do not enjoy (Guillen, 2000; Khanna & Yafeh, 2007), over-scaled Croatian business groups (predominantly state-owned) seem to achieve lower level of revenue per employee.

Other grouping variables such as diversification strategy, corporate governance code, and holding company structure also did not show significant differences among business groups, which mean that these large business systems in Croatia are similar enough. However, conclusions made should be carefully approached having in mind the context of the research and its limitations. First of all, the analyzed sample of business groups is small and biased. We have examined the top 40 business groups in Croatia. However, it would be interesting to see whether same results could be found within less successful and/or smaller business systems. Second, due to small sample size, we have an issue of not completely satisfying the requirements for conducting t-test statistics. We would need at least 30 cases per sampling group. Third, there were some missing value problems that could possibly distort our findings. Fourth, while we reported about the nature of relationship (positive, neutral or negative) among different business group characteristics, we have not checked for causality. Therefore, longitudinal research designs should be implemented to get a better understanding of this complex phenomenon. Finally, although we have examined different business group characteristics, some additional should be observed in the future work such as the extent of vertical/horizontal integration, organizational structure of affiliated firms, group coordination and control efforts, resource allocation systems, reward systems, or additional financial and non-financial performance indicators.

EXTENDED SUMMARY / IZVLEČEK

Poslovne skupine so večje entitete, ki se razprostirajo izven meja združb in značilno prispevajo k ekonomski aktivnosti po svetu. Predstavljajo pomembno obliko poslovne organiziranosti v številnih razvijajočih se državah (Hoskisson, Johnson, Tihanyi, & White, 2005) in so dobro zastopane tudi v nekaterih post-socialističnih gospodarstvih. Na Hrvaškem, denimo, privatne in javne poslovne skupine predstavljajo kar tretjino bruto domačega proizvoda in imajo pomembno vlogo pri razvoju državnega gospodarstva. Vendar pa vemo zelo malo o korporacijski strategiji, procesih upravljanja in zastavljanja organizacijske strukture znotraj poslovnih skupin, saj le-te nimajo enakih značilnosti v različnih kontekstih (Khanna & Yafeh, 2007). Tako je cilj članka raziskati procese managementa in organizacije v poslovnih skupinah na Hrvaškem. Primerjalna analiza največjih poslovnih skupin, ki jih našteva Hrvaška gospodarska zbornica omogoča vpogled v ravni diverzifikacije, konfiguracijo skupine in strukturo upravnih odborov, ter v organizacijsko arhitekturo krovne združbe, trenutno raven internacionalizacije skupine in uspešnost poslovnih skupin. Rezultati kažejo podobnosti in razlike med privatnimi in javnimi poslovnimi skupinami. Tako pričujoči članek prispeva k boljšem razumevanju praks organiziranja večjih poslovnih sistemov na Hrvaškem in ponuja specifične vpoglede v razmejitev med privatnimi in javnimi poslovnimi skupinami.

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JOINING EFFORTS OF EMPLOYERS AND EDUCATIONAL INSTITUTIONS TO DEVELOP COMPETENT GRADUATES[1]

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Abstract

Youth unemployment remains unacceptably high in Europe. Despite increasing numbers of well-educated graduates, employers often report difficulties in recruiting a skilled young workforce. The prevailing view is that educational institutions are slow to respond to the needs of the business community and do not sufficiently incorporate skills development into curricula. The reason for this mismatch might be found in the failure of three stakeholders (employers, students, and education institutions) to mutually understand their needs; they often operate in "parallel universes." Research shows that the young workforce especially lacks a sufficient portfolio of soft skills. This study identifies gaps between competencies developed through education and those required by employers. We research the situation in the Republic of Macedonia and examine students', professors', and employers' perceptions of the importance of soft skills and their development through university education. The results suggest that students are not sufficiently aware of the importance of soft skills compared with professors and employers. Furthermore, university education programs, despite reforms in the last decade, fail to develop the soft skills needed by employers in their graduates. The concluding discussion proposes ways to close the existing gaps, focusing on closer collaboration between education providers and employers in order to improve youth competencies and employability.

Keywords: *Employability, Soft skills, University graduates, Republic of Macedonia*

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1. INTRODUCTION

Many challenges face the young generation around the globe when it comes to work and employment (ILO, 2013), and the situation is even more grim in less-developed transitional countries such as Macedonia. There is an interesting paradox, because employers often complain that they cannot find the right people to fill positions, whereas the young claim that they cannot find jobs. One of the reasons lies in the skills mismatch. Not only is there a mismatch between needed professions and what the educational system supplies, but there is also a skills gap—people do not have the right skills to perform the jobs for which they are qualified (CEDEFOP, 2015). The same report confirms that countries with the highest levels of skill deficits also have lower levels of labor productivity. Skills are therefore a critical asset for prosperity not only for individuals and businesses but also for society as a whole (WEF, 2014).

Keeping up with the right skills development is becoming increasingly difficult in a very dynamic, globalized world. Therefore it is important to start building basic skills early in childhood, and then at higher levels of education when one moves closer to the labor market it is essential that the right competencies are developed to perform well at work. There is a need for lifelong learning because knowledge quickly becomes obsolete. However, the young are again faced with an obstacle. Because the so-called Generation Y is often stereotyped as not being loyal and not making work central, as it was to previous generations (Lyons & Kuron, 2014), employers are more reluctant to invest in their training and development (Jackson, 2009). Therefore even more pressure is put on education providers to ensure that graduates develop the right competencies in school. However, many reports suggest that there is a large skills mismatch or skills deficiency, and that higher education institutions (HEIs) do not know how to respond to industry needs (McKinsey, 2014).

Matching skills and jobs has become a high-priority policy concern for most countries, including the Republic of Macedonia. The Ministry of Education and Science of the Republic of Macedonia (2004) prepared the National Program for the Development of Education from 2005 to 2015. Development of skills was not mentioned directly in the plan to develop higher education from 2006–2010, but indirectly through improving graduates' employability. Employability from the university perspective was described in the document as "well developed imagination, ability for a systematic and methodical approach to problem solving through application of appropriate knowledge, and ability to manage social processes." It was also mentioned that competencies significant for building a "Knowledge-based Society" should be developed through the training programs. Several reforms followed since 2005; however, the higher education field in Macedonia is still plagued with many inefficiencies and much political interference. It is estimated that Macedonian graduates, similar to their counterparts in many countries, do not develop sufficient and necessary competencies during their formal education.

Because of their broad applicability and effect on employability and job performance, the soft skills of graduates have become increasingly important (Andrews & Higgins, 2008; Jackson, 2009). This paper identifies the soft skills gap between what graduates possess and what employers demand in the case of the Republic of Macedonia. Although we focus on a single-country case, both the methodological approach and results could provide useful insights to those in academia and practitioners regarding possible means to close the gap between existing and needed skills of university graduates. We conducted research within the EU-funded Erasmus+ project "Developing Next Generation Leaders through Applied Know-How" among students and professors of leading Macedonian higher education institutions in economics and engineering to obtain information on their perceptions of the importance and development of competencies within the study program. We also used secondary data from research within the same project among employers and already-employed graduates to assess the gap between soft skills that are demanded by employers and those developed through university education.

The paper is divided into several sections. We start with a literature review on the importance of soft skills for university graduates' employability. This is followed by country- and university-level education descriptions, pointing to reforms and specifics of Macedonian higher education environment. We then describe the research methodology

and present results. We conclude with a discussion and implications, focusing on how employers and educational institutions can support soft skills development of university graduate.

2. THE IMPORTANCE OF SOFT SKILLS FOR UNIVERSITY GRADUATES' EMPLOYABILITY

Employability is often defined at an individual level, and refers to graduates' ability to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community, and the economy (Yorke, 2004, p. 7). A more detailed definition proposes three key elements of employability (Hillage & Pollard, 1998): 1) the ability to gain initial employment; 2) the ability to maintain employment and make transitions between jobs and roles within the same organization to meet new job requirements; and 3) the ability to obtain new employment, if required, by being independent in the labor market and able to manage employment transitions between organizations. Fugate et al. (2003, p. 16) conceptualize employability as a form of work-specific active adaptability that enables workers to identify and realize career opportunities.

At the center of the employability debate are skills needed by graduates to improve their employability (Moreau & Leathwood, 2006). When talking about skills we need to distinguish between hard and soft skills, especially when we think of developing leaders, which is the focus of this project. Hard skills are often referred to as technical skills (such as dealing with data and administrative skills); soft skills are behavioral skills or people skills which are needed to apply technical skills in the workplace. The latter are especially important for entry-level managers (Weber et al., 2009). Robles (2012) emphasized another element of soft skills, i.e., personal qualities and career attributes, such as professionalism and integrity. The importance of soft skills has grown over time, and they are considered an important factor enhancing employability in a knowledge-based society (Brown et al., 2003; Rao, 2014). Zehr (1998) claimed that the shift from an industrial economy to an information society and an office economy requires most employees to have integrity, know how to communicate, and be flexible. Some studies even suggest that 75% of long-term job success depends on people skills, whereas only 25% is dependent on technical knowledge (Klaus, 2010). In addition, hard skills are linked to a person's skill set and ability to perform a certain type of task or activity, but soft skills are broadly applicable (Parsons, 2008). However, although many educational programs offer excellent opportunities to develop hard skills, not many manage to develop soft skills that are needed in the workplace now and in the future (Wellington, 2005).

A Eurofound (2014) report on the transition from education to work identified two gaps of skills: basic skills (e.g., literacy, numeracy, and language skills) and soft skills (such as teamwork and communication). A report by SHRM (2015) identified the most common skills that US college graduates in 2015 were lacking as professionalism/work ethic, writing in English, and relationship-building skills. Andrews and Higins (2008) summarized findings of several studies on soft skills which improve graduates' employability, and they identified the following competencies: professionalism, reliability, the ability to cope with uncertainty, the ability to work under pressure, the ability to plan and think strategically, the capability to communicate and interact with others (either in teams or through networking), good written and verbal communication skills, information- and communication-technology skills, creativity and self-confidence, good self-management and time-management skills, and a willingness to learn and accept responsibility.

Taylor (2005) identified both attributes and skills needed by employers. The list of attributes includes loyalty, positive self-esteem, commitment, a sense of humor, honesty and integrity, a balanced attitude to work and home life, enthusiasm, an ability to deal with pressure, reliability, motivation, personal presentation, adaptability, and common sense. The list of skills includes communication that contributes to productive and harmonious relations across employees and customers, teamwork that contributes to productive working relationships and outcomes, problem-solving skills that contribute to productive outcomes, self-management skills that contribute to employee satisfaction and growth, planning and organizing skills that contribute to long-and short-term strategic planning, technology skills that contribute to effective execution of tasks, learning skills that contribute to ongoing improvement and expansion

of employee and company operations and outcomes, and initiative and entrepreneurial skills that contribute to innovative outcomes. Obviously, the skills are mostly soft skills, and the attributes themselves fall into the soft skills category.

Similar conclusions regarding entry-level soft skills were reached by the International Youth Foundation (2013), which conducted research among employers in the service industry and pointed to the following soft skills: communication skills (listening, verbal, and written), planning and organizational skills, teamwork, interpersonal skills, critical thinking and problem solving, investigation and research skills, creative thinking, decision-making skills, multicultural sensitivity and awareness, professionalism (includes grooming and self-respect), honesty and integrity, positive attitude, motivation and ability to learn, dependability and responsibility, adaptability and flexibility, ability to take constructive feedback, hard work, and ethics.

Robles (2012) also examined the needs of employers. Executives in the US identified the following soft skills expected from graduates:

- communication: oral, speaking capability, written, presenting, listening;
- courtesy: manners, etiquette, business etiquette, gracious, says please and thank you, respectful;
- flexibility: adaptability, willing to change, lifelong learner, accepts new things, adjusts, teachable;
- integrity: honest, ethical, high morals, has personal values, does what is right;
- interpersonal skills: nice, personable, sense of humor, friendly, nurturing, empathetic, has self-control, patient, sociability, warmth, social skills;
- positive attitude: optimistic, enthusiastic, encouraging, happy, confident;
- professionalism: business-like, well-dressed, appearance, poised;
- responsibility: accountable, reliable, gets the job done, resourceful, self-disciplined, wants to do well, conscientious, common sense;
- teamwork: cooperative, gets along with others, agreeable, supportive, helpful, collaborative; and
- work ethic: hard working, willing to work, loyal, initiative, self-motivated, on time, good attendance.

Looking more into the future, Adecco and Zukunftsinstitute (2010) emphasized the need for creativity and innovation as the main characteristics of the workplace of the future. Farčnik et al. (2015) forecasted competencies needed in Slovenian enterprises among the aforementioned soft skills add digital skills due to technological changes and business trends.

Universities are becoming more and more aware of the need to develop soft skills in their graduates, and thus in addition to teaching critical subject-specific knowledge and skills, they also have incorporated into the curricula transferable knowledge, skills, and attitudes (Harvey et al., 2002; Shah et al., 2004; Cox & King, 2006). Although the importance of soft skills has long been on the agenda of business education through international accreditation standards (e.g., AACSB and EQUIS), there are still questions regarding the effectiveness of implementation (Schulz, 2008). On the other hand, higher education institutions in the engineering field lag behind (Kumar & Hsiao, 2007), despite some notable efforts by engineering schools (e.g., Mohan et al., 2009; Gider et al., 2012).

3. UNIVERSITY-LEVEL EDUCATION IN THE REPUBLIC OF MACEDONIA

The Republic of Macedonia is one of the successor states of the former Republic of Yugoslavia, from which it declared independence in 1991. Macedonia has taken the route toward the development of a parliamentary democracy with a modern and open market economy. The switch from a socialist to a capitalist economy was very complex, the transition period lasted very long, and the process of privatization was very painful and not very successful if we take into consideration the great number of people who lost their jobs during this process. In spite of the country's economic, political, and security challenges during the transition period, Macedonia carried out many reforms and radical developmental changes in the direction toward adjusting and adapting to EU standards. These reforms were acknowledged by the World Bank in 2009, when Macedonia was ranked as fourth-best reformatory state out of 178 counties, recognizing that the country has undertaken considerable eco-

nomic reform since independence (World Bank, 2009). Nevertheless, Macedonia is still a developing country facing many problems. The economy continues to be fragile and vulnerable, and considerably smaller than that of most of the former Yugoslav states. The national GDP (purchasing power parity) is US$22.57 billion and the GDP real growth rate is 3.5%. Furthermore, GDP per capita is US$10,800 and the Human Development Index is 0.701 (UNDP, 2015).

Macedonia has approximately 2 million inhabitants; more than one-quarter live in Skopje, the capital of the Republic of Macedonia. The labor force in the Republic of Macedonia consists of 955,000 adults, of which 26.1% are unemployed and 73.9% are employed, with an average net salary of approximately €360 per month. The rate of unemployment has remained consistently high; it was more than 30% in 2008, the highest In Europe, and recently it was 26.1% (SSORM, 2015).

Along with the changes caused by the political and economic transformation of the country after its independence, Macedonian higher education institutions were faced with new and different challenges, and acquired a new and far more important role than ever before. These changes were necessary in order for the higher education system of the Republic of Macedonia to take its role in the process of securing the fundamental stability of the national economy, boosting economic growth, strengthening public and private sector competitiveness, creating an efficient legislative, and enforcing high standards and values (The Ministry of Education and Science, 2006, p. 17).

Confident in its aspirations and future within the European Union, the Republic of Macedonia has undertaken a large number of higher education reforms which were meant to assure compatibility with other European education systems and satisfy newly created demands on the labor market as well. Several years prior to its officially joining the Bologna Process in 2003, the Republic of Macedonia undertook certain steps toward a faster adjustment of its education system to European standards, such as obliging universities to implement the European Credit Transfer System (ECTS) and to design their curricula in accordance with Bologna principles. A private initiative was enabled, and thus many national or foreign private faculties and universities were established as well (Eftimov, 2012).

Respecting the national cultural values and characteristics of the existing higher education system, the implementation of Bologna goals aimed at increasing study efficiency, greater student and teaching staff mobility, greater education process quality, a more active student role in providing quality, and perhaps most importantly, providing a better educational structure for the population and improving employability of graduates in national and European labor markets (The Ministry of Education and Science, 2006, p. 265). More than a decade of continuous reforms is a particularly long period, after which a review and detailed analysis of plans and accomplishments is an anticipated step. Analyses of the Bologna process in the Republic of Macedonia have been made, but most often in the form of studies of precise and specific reform topics, such as the implementation of the ECTS (Pop-Ivanov and Velkovski, 2010), effects of dispersed studies (Popovski, 2010), and academic and student mobility (Pop-Ivanov et al., 2010), or in the form of more-complex analyses, which were conducted years ago, such as the analysis of good educational management capacity (Popovski et al., 2007), the process of linking higher education with the labor market (Center for Research and Policy Making, 2009), and the effects of higher education reforms on student employability and the brain drain phenomenon (Eftimov, 2012).

Macedonian higher education expanded significantly in the last decade. The number of students increased dramatically from 40,246 students in 2000/2001 to 56,687 students in 2013/2014. Over the last several years, more and more young people decided to enroll in university. According to data by the Ministry of Education and Science of the Republic of Macedonia, 96.5% of high school graduates enrolled in university in 2010 (compared to 85% in 2008, 64% in 2007, and 42% in 2006) (Ministry of Education and Science, 2008). Another study confirmed that the majority of youth consider education to be a ticket to a better future. According to Eftimov (2012), 65.4% of undergraduate students stated they plan to continue their studies toward M.Sc and Ph.D degrees. From one point of view, this

trend is definitely positive and should be maintained. The majority of young people enrol in university to upgrade their education level and to improve their employment chances in near future. But from another point of view, a great number of them also use higher education studies as temporary refuge from the chronic unemployment problem. Thus young people postpone employment for some period, hoping for better conditions in the labor market in the near future.

The greater number of students was accompanied by even greater increase in the number of universities—from a few public universities in 2000/2001 to 23 universities in 2015 (5 state universities and 18 private universities), or from 31 HEIs in 2000/2001 to 125 HEIs in 2013/2014 (State Statistical Office, 2015). As result of this expansion, the educational attainment indicator in Macedonia (defined as the percentage of the population aged 30–34 who have successfully completed tertiary studies) increased from 11.6% in 2006 to 28.5% in 2015 (Eurostat, 2016). Unfortunately, funds allocated from the budget for education and research did not follow the growing needs of education. Public expenditure for education decreased from 3.7% of GDP in 2004 to 3.5% of GDP in 2010, and the public expenditure for research and development decreased from 0.2% of GDP in 2003 to 0.1% of GDP in 2010. This was followed also by a serious reduction in student tuition fees, from an average €1,000 per academic year in 1998/99 to an average €200 per academic year in 2014/2015. Meanwhile, the Law on Higher Education, which was adopted in 2008, has been subject to more than 20 amendments to date. We can conclude that Macedonian HEIs face the same challenges as their counterparts from the rest of Europe: increased number of students, reduced financial support from the government, reduced financial and other autonomy of educational institutions, severe competition from foreign and private universities, major legal reforms in higher education, changed focus of academics from teaching to research, and a need for more managerial skills and strategic focus (Eftimov et al. 2016). It is more than obvious that many of these reforms are aimed at increasing the number of students and have been successful, but how have they affected students' employability?

The increasing number of university graduates within the population definitely increased the number of employed people with a university degree, from 13.8% in 2003 to 21.1% in 2011, which was welcomed. However, this trend unfortunately also resulted in an increase of unemployed people with a university degree, from 5.6% in 2003 to 14.1% in 2011, which is an unwanted trend in any society (Eftimov, 2012). Even more alarming, more than half of the 41,878 unemployed persons with a university degree, 23,127, are long-term unemployed, which means they have been looking for employment for more than one year, which stimulates brain drain. Universities are expected to offer solutions to present problems, anticipate future challenges, and develop creative solutions and behaviour models that will enable continuous social development and improve social capital. Universities should help students to acquire new types of knowledge; think in a critical manner; develop entrepreneurial awareness and culture; and develop modern skills, flexibility, and an ability to cope with future changes.

4. RESEARCH METHODOLOGY

This research identifies the soft skills gap between the developed and demanded soft skills for Macedonian graduates. We applied an exploratory research design in order to answer the following research questions:

1) What are student perceptions regarding the importance of soft skills for their employability?
2) What are student perceptions regarding the development of soft skills through university education?
3) Are there differences between students' and professors' perceptions of the importance and development of soft skills?
4) Are there differences between students', professors', and employers' perceptions of the importance and development of soft skills?

In order to answer our research questions, we conducted surveys with university students and professor, and then combined these with secondary data from the AIDP research report regarding employers' and young employees' perceptions of soft skills development and their use at work (AIDP, 2016). The basis

for the survey questionnaire was the list of 67 Lominger competencies of leadership architecture (Lombardo and Eichinger, 2007). These competencies are based on Lombardo and Eichinger's research and experience in leadership development and represent a comprehensive set of competencies that are relevant for effective performance of leadership tasks across hierarchical levels, organizational functions, countries, and time. Thus we may regard these competencies as universal for effective leadership as well as for effectively performing other tasks and functions in a business setting. These competencies are grouped into six factors: Strategic Skills, Operating Skills, Courage, Energy and Drive, Organizational Positioning Skills, and Personal and Interpersonal Skills. From the Lominger list of competencies, a few were omitted from our research because they are more relevant for higher levels of leadership and our focus is more on entry-level positions. Instead, we included some competencies linked to digitalization, which is an important trend and is high on the EU agenda as a way to enhance European competitiveness (European Commission, 2014). We included some of the highest-ranked digital competencies from the research conducted in Slovenia (Farčnik et al., 2015) because they reflect the level of digitalization development in the region: using (advanced) office software programs, using the internet, using project management software, cloud computing, digital marketing and sales, and using statistical packages.

For the student survey, each of the competencies was assessed in terms of its importance and development through formal education by using a five-point Likert scale (from 1 = not at all to 5 = to a great extent). For students, we also gathered some demographic data and data pertaining to career preferences and working experience by offering multiple choices with only one possible answer. We asked ten questions regarding motivation to study, satisfaction, acquiring knowledge and developing competencies, and recognizing employer needs and the need for additional training when students start working (again using a five-point Likert scale). The student survey was administered over two weeks (from February 15, 2016 to March 3, 2016), using the Google Docs free software to create, launch, and technically support the survey. Testing of the functionality of the online questionnaire and the clarity of the questions was performed on a small group of students before launching the online surveys. An email that included a link to the survey with a short explanation of its purpose was sent to students in their final year of study or recently graduated (within the last three years) students from the leading economics and engineering schools in Macedonia within Ss. Cyril and Methodius University (i.e., Faculty of Economics-Skopje, Faculty of Mechanical Engineering-Skopje, Faculty of Computer Science and Engineering, Faculty of Electrical Engineering and Information Technology, Faculty of Natural Sciences and Mathematics, Faculty of Technology and Metallurgy, Faculty of Civil Engineering, Faculty of Architecture, and Faculty of Pharmacy).

Our initial target was to collect 700 responses from both business/economics and engineering fields of study. However, we managed to gather 1,343 student responses. The main student motivation to engage in the survey was the opportunity to receive free training courses as an output of the project. All criteria for proper and proportional representation of different gender students were met, along with the criteria for different educational profiles, students with different ways of financing their studies, and students with various grade point averages, all of which approximate the actual percentage of these students within the Macedonian educational system. Our sample consisted of 1,343 students; approximately half were from the field of economics (658) and half were from engineering (685). The sample was well balanced with regard to gender (45.9% male and 54.1% female students) and the vast majority of students in the sample were in the undergraduate program (92.9%). To analyse the data we performed descriptive statistics analysis and independent sample t-tests to analyse differences between economics and engineering students.

The aim of the professor survey was to gain insights into how academia understands employer demands for graduate competencies and how it responds to changing employer competency demands. In addition, we wanted to gather professors' opinions regarding the importance and development of competencies. In the period from February 22 to March 1, 2016, an online survey was conducted among 10 university professors teaching at different schools within Ss. Cyril and Methodius University (five from economics and five from engineer-

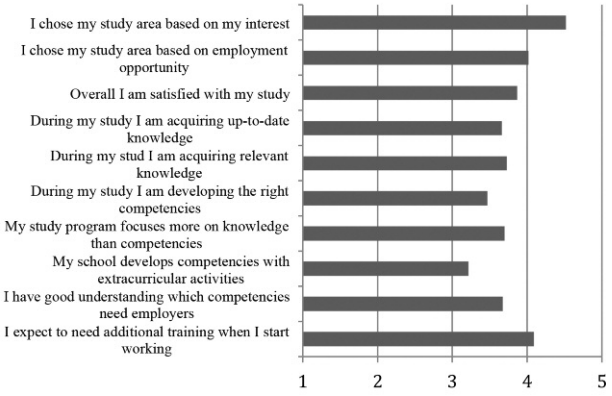
ing). The survey was a combination of 12 open questions asking about employer demands regarding the competencies of their graduates, the response to employer demands by the school, and proposals for competency development, along with the same evaluation of the importance and development of competencies from the amended Lominger list which was used for students. Six of the professors were assistant professors and four were full professors. Two of the respondents began employment at the university between 1980 and 1990, three between 1990 and 2000, and five between 2000 and 2010. We performed a qualitative analysis of professors' responses and descriptive statistics for the Lominger competencies.

For employers, the AIDPI in association with the Macedonian HR Association (MHRA) conducted a survey among two groups, namely managers and new employees. The survey was conducted from February 20 to March 10, 2016 in ten large and medium-sized Macedonian companies from different industries: construction, transport, machinery production, metallurgy, tobacco, electronics, automotive, banking, and finance. The managers were mostly HR managers and line mangers (10); seven were female and three were male, and all of them had at least a university degree. The new employees' survey was conducted among 20 young employees (21 to 30 years old); 13 were women and seven were men, and they were mostly newly employed (less than 2 years), with at least a university degree. They were working in different sectors and positions, but ¾ of them worked within their degreed profession. Their career preferences were mostly focused on becoming experts in their professional areas; only 5% of them hoped to acquire a managerial position. The questionnaire for employers and employees was different from the one for students and professors. Because of time constraints, they did not evaluate each competency in terms of importance and development, but rather listed the most important items from each group of competencies. The questionnaire also contained some open and closed questions regarding the training and development practices in the companies. For the purpose of this study we used results concerning needed and developed competencies.

5. RESULTS

In order to understand the context of competency development, we first analysed questions related to the education experiences of students. Students choose their area of study based more on their interest than on consideration of employment opportunities, and students were rather satisfied with their overall study experience (Figure 1). Students evaluated acquired knowledge (both how current it was and its relevance) higher than development of competencies. Approximately half of the students agreed that they were developing the right competencies during their study program (17% of students strongly agreed and 33% agreed). In addition, 60% of students agreed that their study program focuses more on knowledge than on competencies, and approximately 40% agreed that their school develops competencies through extracurricular activities. Interestingly, students were quite confident that they understand which competencies are needed by employers (only 12% disagreed with the statement), but even stronger was their belief that they will need additional training when they start working (75% agreed with the statement).

Figure 1: Students' attitudes toward study experiences and needed competencies

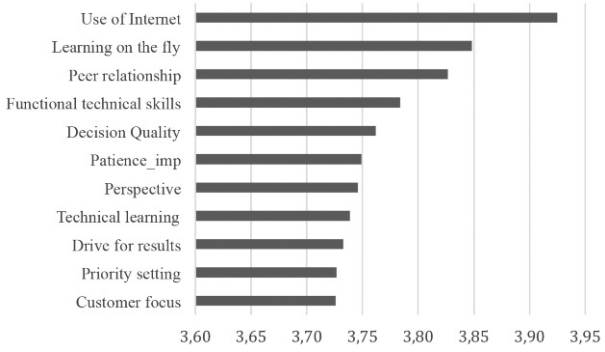


Scale: 1 = strongly disagree to 5 = strongly agree

To analyze the importance of competencies as perceived by students, we first present the list of top competencies as perceived by students with regard to their importance when they start working (Figure 2). Use of the internet, with the highest score, is not surprising because these students are technology

savvy and use the internet extensively. The second-highest score was for the learning on the fly, which indicates their awareness that they will need additional training when they start working. Perseverance may seem surprising in third place, but this rating can be explained by the current crises and situation in the labor market, which is not favorable to youth, as well as the rather dynamic and volatile business environment. Students also placed high importance on functional technical skills, decision quality, peer relationships, planning, time management, self-development, problem solving, and customer focus.

Figure 2: Students' perceptions of the most important competencies when they will start working

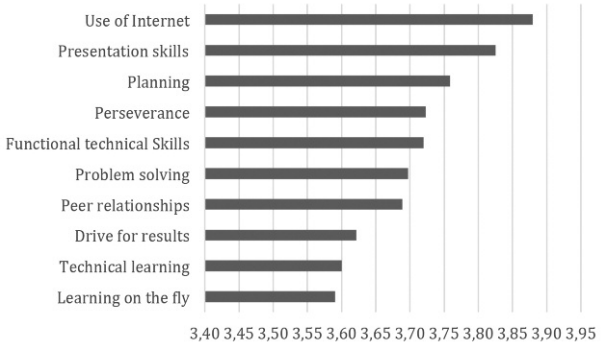


Scale: 1 = not at all important to 5 = very important

The least important competencies in the eyes of the students (scores lower than 3) were politically savvy, compassion, humor, and dealing with paradox. It is interesting that two of the digital competencies were also among the lowest ten with regard to importance, i.e., cloud computing and digital marketing and sales.

In order to identify the skills gap, it is important to analyze how well competencies are developed during formal education, i.e., through the study program. Figure 3 shows that the most developed competencies were use of the internet and presentation skills, followed by planning, perseverance, functional/technical skills, problem solving, and peer relationships. However, scores were not especially high, meaning that on average students assessed their competencies to be somewhat developed. The list of least developed competencies is very similar to the list of least important competencies.

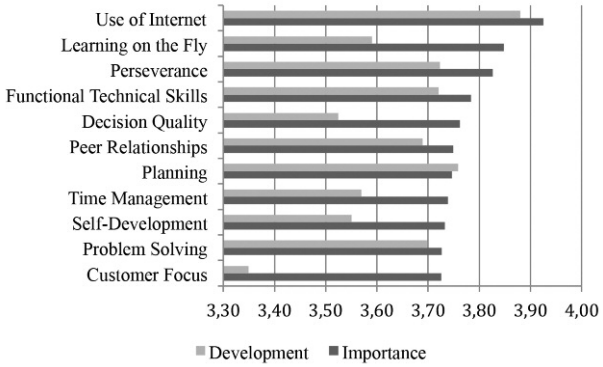
Figure 3: Students' perceptions of the most developed competencies through the study program



Scale: 1 = not at all to 5 = to a great extent

An interesting skills gap is seen when comparing scores for importance and development of competencies (Figure 4). Learning on the fly, decision quality, time management, self-development, and especially customer focus all have rather large differences between the importance and development scores.

Figure 4: Perceived importance and development of competencies by students for 10 most important competencies



Scale: 1 = not at all to 5 = to a great extent

Competencies with the largest difference between importance and development were work/life balance (difference 0.67), composure (0.56), sizing up people (0.45), customer focus (0.38) and motivating others (0.37). These competencies also indicate a potential skills gap when students start working. Almost no differences (0.05 or less) were found for building effective teams, use of the internet, organizational agility, process man-

agement, problem solving, listening, priority setting, managing and measuring work, and written communication. However, other than use of the internet and problem solving, all of these competencies had rather low scores of importance (less than 3.55). There were also some competencies for which development scores were higher than the importance scores, the difference being the highest for presentation skills (0.20), whereas drive for results, action oriented, and planning were scored 0.06 or lower.

Furthermore, to answer our third research question, we compared the evaluations of competency importance by professors and students (Table 1). Overall, professors evaluated the importance of competencies much higher than did students (all scores higher than 4). Some of the most important competencies were the same, but there also were many differences. Creativity, career ambition, composure, priority setting, drive for results, and innovation management were given high scores by professors. Similar observations can be made for results regarding development (Table 2). The scores by professors were higher, but not as much as for importance.

Table 1: Perceived importance of competencies by professors and students

Skill	Mean Importance Professors	Skill	Mean Importance Students
Use of Internet	4.70	Use of Internet	3.92
Problem Solving	4.50	Learning on the Fly	3.85
Personal Disclosure	4.40	Perseverance	3.83
Career Ambition	4.30	Functional Technical Skills	3.78
Creativity	4.30	Decision Quality	3.76
Composure	4.20	Peer Relationships	3.75
Customer Focus	4.20	Planning	3.75
Priority Setting	4.10	Time Management	3.74
Drive for Results	4.10	Self-Development	3.73
Innovation Management	4.10	Problem Solving	3.73

Table 2: Perceived development of competencies by professors and students

Skill	Mean Development Professors	Skill	Mean Development Students
Advanced use of MS Office	4.20	Use of Internet	3.88
Presentation Skills	4.10	Presentation Skills	3.83
Use of Internet	4.10	Planning	3.76
Functional Technical Skills	3.90	Perseverance	3.72
Use of Project Management Software	3.80	Functional Technical Skills	3.72
Customer Focus	3.80	Problem Solving	3.70
Planning	3.80	Peer Relationships	3.69
Listening	3.70	Drive for Results	3.62
Peer Relationships	3.70	Technical Learning	3.60
Composure	3.60	Learning on the Fly	3.59

Our final research question explored the differences between young employees and employers on one side and students on the other side. Here the comparison was slightly more complex because we had to compare results from two different surveys, and no direct comparison of scores was possible because managers and young employees only chose the important competencies but did not evaluate them on the scale from 1 to 5. Among competencies needed by employers, the following were most frequently mentioned: decision quality, using project management software, motivating others, delegation, directing others, using advanced software programs, using the internet, using statistical packages, listening, integrity and trust, developing direct reports, strategic ability, and timely decision making. Comparing this list to the previously described research on students' and professors' perception of competency importance shows that there is not much similarity between the lists—only decision quality and use of the internet are on all three lists. Integrity and trust is only on the employer list, and it also seems that employers place more importance on digital skills. These differences may be the result

of the different methodology used in assessing the importance—students and professors assessed the importance of all competencies, whereas employers just chose the most important ones from the list. However, the differences also may partially reflect different views.

Finally, it is worth mentioning that a comparison of managers' and young employees' perceptions of the importance and development of competencies shows that young employees feel extraordinarily confident that they possess the required soft skills grouped in all the studied work activities: execution, setting and achieving of goals, and teamwork. On the other hand, managers identified many areas for improvement when they evaluated the skills of young employees.

6. DISCUSSION AND RECOMMENDATIONS

Several conclusions can be drawn from the results of our survey. First, it seems that rather low scores regarding the importance of competencies from students compared with those from professors and employers may indicate that they are not sufficiently aware of how important these skills are for their employability and career success. Students' assessment of perceived importance ranged only from 2.6 to 3.9 on a five-point scale, which is rather low (almost 0.5 lower on many dimensions than professors' scores). It is somewhat surprising that digital competencies were not recognized as being very important (other than use of the internet, these competencies were scored below 3.5). Comparing students' evaluation of importance with the Lominger leadership architecture proposal of key competencies for individual contributors and managers (Table 3) shows that students actually captured five of the competencies for individual contributors and four for managers, but these four are lower on the list. We can depict the first gap as all three energy-factor competencies that are important according to Lominger: action oriented, perseverance, and drive for results. Students recognized only the importance of perseverance (3.83) and drive for results (3.72); action oriented, which is at the top of the Lominger list, scored only 3.40. Rather low as well was the student score for integrity and trust, only 3.52.

Table 3: Lominger key competencies for individual contributors and managers compared to students assessment of the importance of key competencies

Individual contributors		Managers	
Lominger	Students	Lominger	Students
Action oriented	No	Action oriented	No
Decision quality	Yes	Comfort around higher management	No
Functional/technical skills	Yes	Customer focus	Yes
Intellectual horsepower	n.a.	Functional/technical skills	Yes
Learning on the fly	Yes	Integrity and trust	No
Perseverance	Yes	Intellectual horsepower	n.a.
Problem solving	Yes	Organizing	No
Process management	No	Perseverance	Yes
Drive for results	No	Problem solving	Yes
Standing alone	No	Drive for results	No
Technical learning	No	Standing alone	No

Source: Based on Lombardo, M.M. & Eichinger. R.W. (2007). The Leadership Machine: Architecture to develop leaders for any future, p. 28.

Our results seem to confirm the importance of soft skills for graduates/young employees from the employer perspective (reflected in professors' perceptions of importance) and also suggest that most soft skills are not sufficiently developed through formal education. When students assessed how well their competencies were developed during the study program, only use of the internet and presentation skills received a score higher than 3.75 (Figure 2). This result is not surprising, because professors indicated that project work and presentations have been incorporated into the curricula, so these two competencies seem to be frequently used to fulfill study requirements. Obviously, the use of the internet is also a competency developed in the young generation from early childhood, so university-level education plays a less important role in its development.

On the other hand, of the competencies identified as important by employers (such as motivating others, delegation, directing others, developing direct reports, listening, integrity and trust, strategic ability, timely decision making, decision quality, using project management software, using advanced software programs, using the internet, and using statistical packages), only a few received scores above 3.5 in terms of students' perceptions of how these are developed through the university education (e.g., use of the internet, decision quality, and timely decision making). Professors' assessment of competency development was overall higher than that by students, especially with regard to digital and communication skills, but interpersonal skills were evaluated by professors as less developed.

The results from AIDP (2016) suggest that employers currently require a diverse portfolio of competencies and soft skills in addition to a good command of the professional body of knowledge. Employers do not want to invest in long training and development processes; instead, they require graduates with practical experience and rapid adaptation ability. New trends in business, technology, and society have brought a new set of competency requirements. In response, higher education institutions have already incorporated changes into the design and delivery of the study programs with reference to the changing needs of employers. The professors' survey showed that competencies are intended to be developed through an integration of theoretical and practical knowledge, greater interaction and in-class activity, and practical exercises. Although an increased effort of the teaching staff in increasing graduates' competencies can be confirmed based on the professors' responses, student assessments of how much competencies are developed suggest that efforts have not materialized in competency development.

This conclusion is similar to Boyatzis and Saatcioglu (2008), who concluded that competency development programs in higher education institutions are not yet effective enough to prepare graduates for work, especially in engineering schools (Kumar & Hsiao, 2007). It seems that despite changing the overall approach to teaching and learning, there is a need for additional competency development outside of the formal study programs. Schools may offer a different portfolio of activities for competency development, such as training and mandatory apprenticeships, seminars and workshops, extra-curricular activities, conferences, etc. Some schools have established career centers to assure constant support of students' competency development. New teaching methods, an obligatory student apprenticeship, closer collaboration between academia and the business community, and active curriculum development and adaptation are proposed for better graduate competency development.

Although students are rather confident that they know what employers expect from them, the results suggest that they may not be so well acquainted with employers' needs, and thus more effort needs to be put into informing students of the requirements. This could also motivate students to engage in training activities to reduce the gaps in needed and developed competencies. We identified potential areas for training with the purpose of better preparing students for the transition to work. There is evidence of a lack of skills in all six factors of Lominger competencies, but most critical to develop seem to be energy and drive, courage, and personal and interpersonal skills.

We suggest several ways to improve the situation concerning the required employees' soft skills when linking employers and higher education institutions. Firstly, cooperation between universities and employers should be strengthened in identifying key soft skills needed in graduates, which are constantly changing due to technology development and other socio-economic change. In addition, students need to be informed early in the study process about employer demands, which should increase their awareness and motivation to develop these skills. Accordingly, teaching content and methods could be adapted to develop these critical competencies, including close cooperation between universities and employers regarding apprenticeships, action-oriented learning (e.g., real cases), guest speakers from practice, graduate placement, etc. (Harvey et al., 2002). In this way, graduates could enhance their "personal capital," which was defined by Brown and Hesketh (2004) as the sum of various personal qualities that employers value, and thus could increase their employability.

Graduate employability has become a critical benchmark for measuring performance at both an individual and an institutional level in higher education (Harvey, 2001), and thus Macedonian universities should start using these criteria to evaluate their effectiveness. Based on the surveys of young employees and employers, critical factors can be determined and solutions could be proposed by involving all stakeholders. Employers can be formally assigned to schools' advisory boards and involved in program evaluation as well as design. This would increase schools' capabilities to respond to employer needs and help them develop relevant competencies in graduates.

Another possibility is a formal training program for graduates and young employees focused on soft skills development. The design of such a program is also the key objective of the Erasmus+ project on Developing Next Generation Leaders through Applied Know-How. The research presented in this paper forms the basis for curriculum development, and the program is supposed to be implemented at a later stage of the project. In the design process and delivery of the program, universities, professional associations, and consulting companies are joined in order to assure relevance of the content and an overall high quality of the program. Because this is an example of joint efforts of universities and employers whose young employees will attend the program, further research into competency development through the program should be conducted to assess the validity of such initiatives and to propose recommendations regarding the content and delivery of such formal training programs.

EXTENDED SUMMARY / IZVLEČEK

Brezposelnost mladih je v Evropi zelo visoka, vendar kljub naraščajočemu številu dobro izobraženih, delodajalci pogosto poročajo o težavah pri pridobivanju usposobljenih mladih kandidatov za zaposlitev. Prevladujoče mnenje je, da se izobraževalne institucije prepočasi odzivajo na potrebe poslovne skupnosti in v svoje programe ne vključujejo dovolj razvijanja uporabnih veščin. Razlog bi lahko bil tudi v pomanjkanju razumevanja o potrebnih veščinah pri treh glavnih deležnikih (delodajalcih, študentih in izobraževalnih institucijah), ki pogosto delujejo v "vzporednih svetovih". Raziskave kažejo, da mladim posebej primanjkujejo mehke veščine. Zato je namen naše raziskave ugotoviti vrzeli v kompetencah, ki jih mladi razvijejo tekom univerzitetnega študija, in potrebami delodajalcev. Raziskali smo stanje v Republiki Makedoniji s pomočjo raziskave med študenti, univerzitetnimi profesorji in delodajalci glede njihovega razumevanja pomembnosti in razvitosti kompetenc v času študija. Rezultati kažejo, da se študenti ne zavedajo prav dobro, kaj od njih zahtevajo bodoči delodajalci. Prav tako univerzitetni študijski programi kljub številnim spremembam v zadnjih desetih letih ne razvijajo dovolj kompetenc, ki jih od diplomantov zahtevajo delodajalci. Na koncu prispevka zato ponudimo predloge, kako bi lahko zmanjšali ugotovljene vrzeli, predvsem s tesnejšim sodelovanjem med izobraževalnimi institucijami in delodajalci.

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CORPORATE STRATEGY AND INDUSTRY 4.0: BIBLIOMETRIC ANALYSIS ON FACTORS OF MODERNIZATION

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Abstract

The fourth industrial revolution has produced several new fields of research, yet the areas of management and business are lagging behind. The aim of the present paper is to show connections and common thoughts within various literature areas, identify the main theoretical influxes into the field, and make informed suggestions for its future development. The analysis is conducted through the use of bibliometric methods, specifically co-citation analysis (Small, 1973) and bibliographic coupling (Kessler, 1963). Co-citation is defined as the frequency with which two units are cited together while bibliographic coupling uses the number of references shared by two documents as a measure of the similarity between them (Zupic & Čater, 2015). This enables us to identify relevant clusters that will show which scientific areas are most commonly connected with our chosen keywords. Furthermore, we will elaborate the advantages, disadvantages, effects and possible implications of the new robotization era processes on companies' business model transformation and changes in organizational structures, with an emphasis on the strategy of firms and the management behind it.

Keywords: *industry 4.0, bibliometrics, co-citation analysis, bibliographic coupling, robotization, corporate strategy*

1. INTRODUCTION

Industry 4.0 or the so called fourth industrial revolution refers to the current and upcoming changes occurring in the industry development. Zhou et al (2015) noted that industry 4.0 includes future industry development trends to achieve more intelligent manufacturing processes. Radical changes have an impact on companies and their business models, and contemporary firms are faced with having to change their corporate strategies and organizational structures in order to adapt to the changes and survive on the market. The extant research has to some extend touched upon trends in the field of corporate strategy and industry 4.0; studies foresee large-scale changes in societal and business model transformations (Loebbecke and Picot, 2015), virtualization and decentralization in the manufacturing landscape (Brettel et al., 2014) and in the field of cloud computing, big data and intelligent manufacturing (Zhou et al., 2015).

Nevertheless, due to the rapid occurrence of events, new fields for scientific discovery and analysis emerge on a regular basis which implies that there is still room for additional research of the fields that have not been covered yet. There has been plenty of research regarding the industry 4.0 trends within the field of informational technology, but much less has been done within the field of management, business and economics. We have found out that the analysis of explicitly showing the correlations between all relevant literature is lacking. In addition, the extant research has not yet examined the positive and negative potential consequences of robotization overall, especially within the field of strategic management.

The aim of this paper is to show connections and common thoughts within various literature areas, identify the main theoretical influxes into the field, and make informed suggestions for its future development. The analysis will be conducted through the use of bibliometric methods, specifically co-citation analysis (Small, 1973) and bibliographic coupling (Kessler, 1963). Co-citation is defined as the frequency with which two units are cited together while bibliographic coupling uses the number of references shared by two documents as a measure of the similarity between them (Zupic & Čater, 2015). This will enable us to identify relevant clusters that will show which scientific areas are most commonly connected with our chosen keywords. Furthermore, we will elaborate the advantages, disadvantages, effects and possible implications of the new robotization era processes on companies' business model transformation and changes in organizational structures, with an emphasis on the strategy of firms and the management behind it.

We will show the weights of common literature by using Web of Science and VOSviewer programme analytics to graphically show the trends and inclinations of robotization in near future. Easily accessible online databases with citation data – such as Web of Science - have attracted widespread attention of bibliometric methods, write Zupic and Čater (2015), and VOSviewer is a program that has been developed for constructing and viewing bibliometric maps (Van Eck and Waltman, 2009). Even though there are many speculations that exist within our topic, we will also touch the impact of robotization on management, strategy, and labour area. This paper will try to deepen the view on the matter by summing up many different aspects and apply them on today's situation vis-a-vis a forecast impact.

2. THEORETICAL BACKGROUND

Digitalization and big data analytics – or datafication - penetrate all areas of life and create new ways of working communicating and cooperating (Loebbecke and Picot 2015). Holotiuk and Beimborn (2017, 991) write that digitalization fundamentally impacts firm's strategy development. For example, one of the responses of organizations when it comes to digitalization, can be seen in the uprising of the industry 4.0 which "/ …/ focuses on the establishment of intelligent products and production processes (Brettel et al., 2014)". Brettel et al. (2014) say that at the moment, "/ …/ industry 4.0 is a popular term to describe the imminent changes of the industry landscape, particularly in the production and manufacturing industry of the developed world." Furthermore, Popescu (2011, 726) presents yet another aspect and claims that virtualization solves most of the problems that occur in organizations when it comes to management applications and continues that virtualization opens vast opportunities in the business continuity. Due to the uprise of the digitalized economy, new business models and strategies have arose (Peitz et al, 2006) - a significant portion of trade now takes place online, for example. Another paradigm that Lee et al (2017, 1) refer to as a novelty that is rapidly gaining ground in scenarios for factories of the future is called smart factory. "The concept of smart factories began to be established as a combination of information and communication technologies and digital automation solutions throughout the overall production process / .../ (Lee et al 2017, 1)" and can now be found in various areas of operations of a company. Last but not least, "/ .../ robots are stronger / .../" and "/ .../ the worry is that our market economy will not, on its own, be able to create new jobs with comparable pay for those who are losing their jobs" (Stiglitz, 2017).

Enlisted concepts show how vast are the areas, which are covered by the formation of new technologies and changes that have developed due to the technological advancement. There is a wide range of opportunities on one side and numerous drawbacks and dilemmas on the other. According to Zhou et al. (2015) there are scientific challenges, technological challenges, economic challenges, social problems and political issues. Organizations will have to respond to those challenges in order to survive and stay competitive actors on the market. Companies will need virtual and physical structures that allow for close cooperation and rapid adaption along the whole lifecycle from innovation to production and distribution (Schumacher et al. 2016). This calls for a changed strategy that takes the challenges and changes into account.

3. METHODS

Methods used in our analysis arise from the bibliometric field, meaning that it deals with a statistical analysis of scholarly communication through publications (Batistič, Černe & Vogel, 2017). Bibliometric analysis includes two techniques – co-citation analysis and bibliographical coupling.

3.1 Keyword selection

After a close overview of the basic literature, we have selected several keywords covering topics that appear most frequently and are consistently cited throughout the literature and refer to keywords connected with the terms digitalization and strategy development. For the purpose of our analysis we have chosen the following keywords: Digitalization, big data, virtualization, datafication, industry 4.0, digitalized economy, smart factory and robotization. We have looked for these keywords along with the following keywords that refer to the field of strategies in organizations: Strategy, strategic management and organizational response.

3.2 Co-citation

Co-citation analysis determines the key documents or core documents, which have had the most influence on the chosen research area through the analysis of citation frequency of the documents by other literatures simultaneously (Yu & Xu, 2017). This method connects two documents that appear together in the references of the same papers into networks. It is an indication that the two papers have derived on common knowledge (Lazzeretti et al., 2017). It occures when two documents without any direct relationship are cited simultaneously by other documents. These two papers are said to be co-cited.

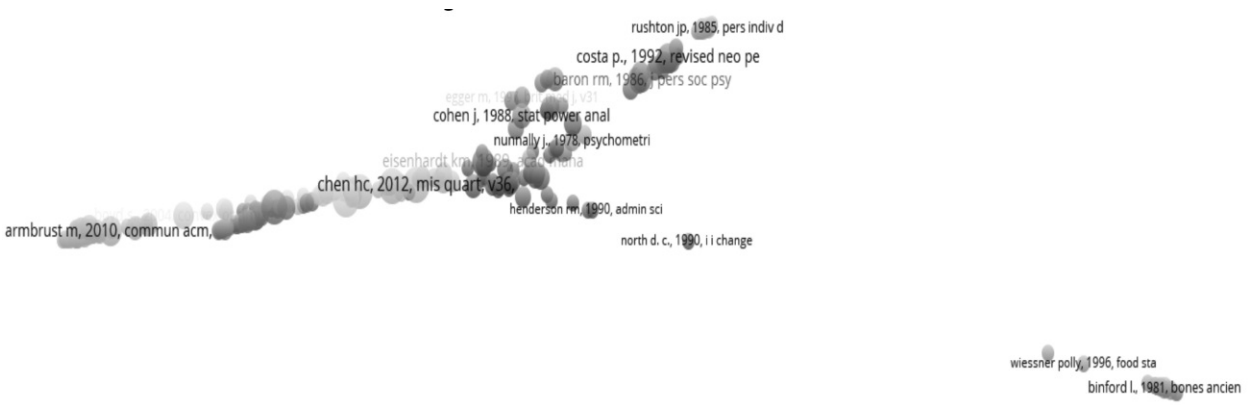
Web of Science, scientific citation indexing service, provided us with the list of scientific papers that included the following set of keywords:

> *"(digitalization OR big data OR virtualization OR datafication OR industry 4.0. OR digitalized economy OR smart factory OR robotization) AND (strategy OR strategic management OR organizational response)"*

Out of Web Science's database, 4390 primary papers were found and we have included the first 1000 documents (based on relevance, an indicator founded in citation frequency) in our analysis. The analysis was conducted in VOSviewer with the co-citation technique. Our counting method was full counting, our unit of analysis were documents. We have predetermined that the minimum number of citations of a document has to be 3 – out of the 1000 documents, 361 have met the threshold, and for all those documents, the total strength of the co-citation links with other documents will be calculated.

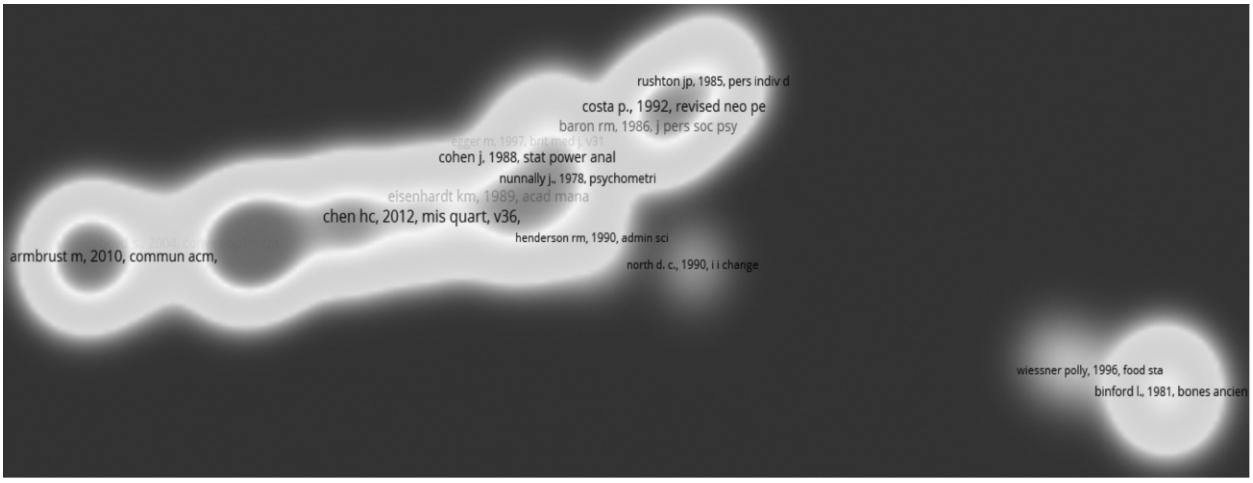
Figure 1 shows the network of clusters that were formed with the co-citation analysis and where they lie in relation to one another. Figure 2 shows the density of the clusters and we can see where the density is the strongest as well as the outliers. Table 1 shows the analysis of the biggest eight clusters that were formed following the co-citation analysis. Name of the cluster shows which topic is dominant in the cluster, number of items indicates how many items there are in each separate cluster and the brief description gives information on the content of the documents in the clusters.

Figure 1: Network visualization



Source: Own VOSviewer analysis.

Figure 2: Density vizualization



Source: Own VOSviewer analysis.

3.3 Bibliographical coupling

Bibliographic coupling differs from co-citation in "/…/ describing similarities among groups of papers for information retrieval" (Youtie, Kay and Melkers, 2013, 147). Zupic and Čater (2015, 438) noted that "co-citation analysis and bibliographical coupling use citation practices to connect documents, authors or journals." Youtie, Kay and Melkers (2013, 145) define bibliographic coupling as "/…/ the appearance of a reference work in the cited references of articles from two or more center researchers."

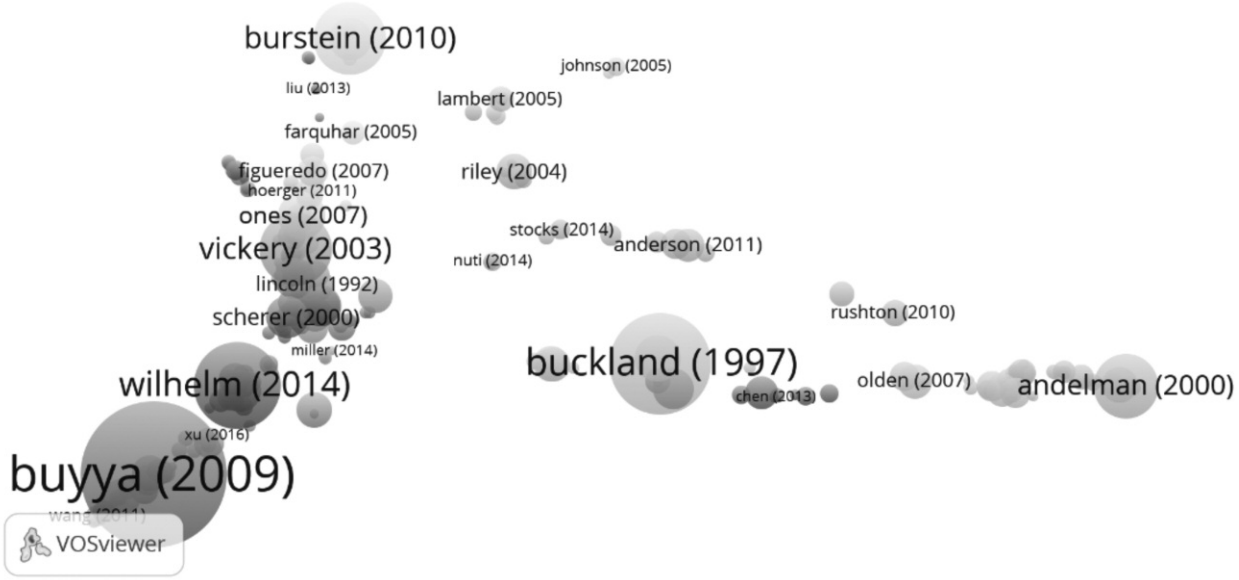
The same set of keywords as in the co-citation analysis has again been applied for the extraction of key literature. Out of Web Science's database, 4390 primary papers were found and we have included the first 1000 documents in our analysis.

Analysis was done in VOSviewer with bibliographical coupling – it links papers that cite the same articles and represents the current state-of-the-art of the examined field. Our counting method was full counting, our unit of analysis were documents. We have predetermined that the minimum number of citations of a document has to be 10 – out of the 1000 documents, 598 have met the threshold and for all of those documents the total strength of the bibliographical coupling links with other documents will be calculated. The largest set of connected items consists of 312 items.

Table 1: Clusters from co-citation analysis

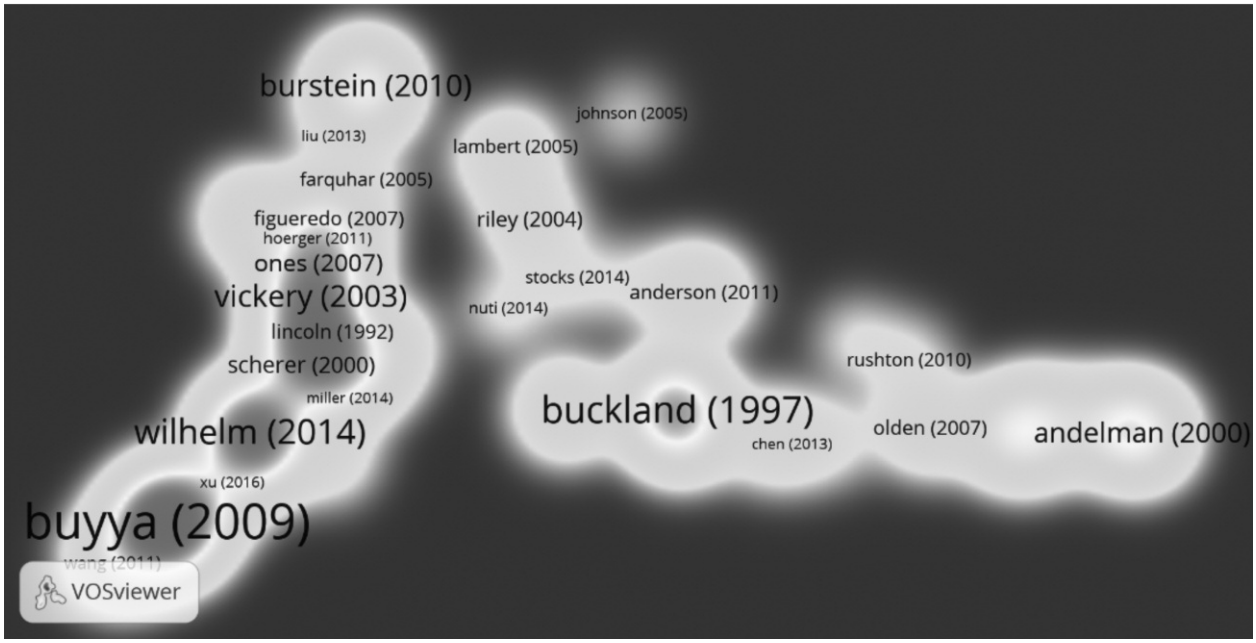
	Cluster	N°of items	Brief description
1	Bioinformatics	46	The area in the red cluster contains literature on Bioinformatics, which is an interdisciplinary application of IT on biological data for a better understanding on available information. There is some emphasis on knowledge management and new formalized approaches on the matter as well. Collins and Varmus (2015) write " / .../The initiative will encourage and support the next generation of scientists to develop creative new approaches for detecting, measuring, and analyzing a wide range of biomedical information".
2	Computer science	45	The computer science cluster includes papers that describe principles, usage, theory, design, development and application of computer and software systems. It is notable, that few papers are done on the topic of cloud computing, " / .../a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction" (Baliga et al. 2011, 150). Cloud computing systems fundamentally provide access to large pools of data and computational resources through a variety of interfaces similar in spirit to exist- ing grid and HPC resource management and programming systems. (Nurmi et al., 2009)
3	Knowledge-based view	41	The common line of the articles within KVB cluster are explaining, elaborating or proving various concepts about a specified topic. The information can help an organization, government or individuum to adopt or improve a strategy in order to obtain a needed competitive advantage. It is a learning approach which can serve for instance, as a basis for human capital involvement in an organization. As Cohen and Levinthal (1990) write " / .../ Outside sources of knowledge are often critical to the innovation process, whatever the organizational level at which the innovating unit is defined" .
4	No general topic	36	Because there cannot be find any relevant common line between the literatures, the cluster is unnamed, hence irrelevant for our paper.
5	Psychology	28	The cluster consists psychology articles that are focused on different strategic, conceptual and statistical factors as well as measures that influence the personalities of human beings. For instance, aggregation is one of " / .../ the most expected form personality measures, is a procedure that has been implicitly practiced almost since the dawn of scientific psychology" (Digman, 1990).
6	Big data, digital data	22	In this cluster, we can find articles weighting and considering the increasing impact of big data usage for different purposes. " / .../ because of big data, managers can measure, and hence know, radically more about their businesses, and directly translate that knowledge into improved decision making and performance" (McAfee and Brynjolfsoon, 2012).
7	History, anthropology	20	An outlier of all cluster with literature exploring miscellaneous anthropological scope of surface. One " / .../paper presents research on the conditions under which progressive levels of burning may occur to archaeological bone" (Stiner and Kuhn, 1994).
8	Personality factors	16	The final memorable cluster has factors that influence personality, where (Ashton et al., 2009) found them " / .../as measures of broad personality factors do not necessarily imply the existence of higher-order factors". Another paper tells us " / .../that almost all of the common variance between factors can be attributed to a single general factor related to social desirability" (Bäckström et al., 2009).

Figure 3: Network Visualization



Source: Own VOSviewer analysis.

Figure 4: Density Visualization



Source: Own VOSviewer analysis.

Figure 3 shows the network of clusters that were formed with the bibliographic coupling analysis and where they lie in relation to one another. Figure 4 shows the density of the clusters and we can see where the density is the strongest as well as the outliers.

Out of 312 items, 23 clusters in total have been formed with 814 links and 1406 link strength. Common topics within the articles of each cluster are the following (listed in the order from the biggest to the smallest cluster): Cloud computing, biodiversity, bioinformatics, psychology/behavior/personality, big

data/data analysis, research on bats, socioeconomics, medicine, virtual networks, operations management, human resources/public health, human behavior, cloud computing/big data, archeology, big data, biology, industry 4.0, medicine, breast cancer research, psychology, health sciences, tubal flushing for subfertility and marketing. We have closely examined the biggest seven clusters and the tenth one that is related to operations management.

Table 2 shows the analysis of the biggest eight clusters that were formed after the bibliographic coupling analysis. Name of the cluster shows which topic is dominant in the cluster, number of items shows how many items in in each separate cluster and the brief description gives information on the content of the documents in the clusters.

4. DISCUSSION

Co-citation analysis and bibliographic coupling analysis have shown that the biggest amount of literature that was found in Web of Science database and included relevant keywords of our choice can be found in the scientific fields of computer science, informatics, biology and medicine. On the other hand, we have found out that the amount of literature, connected with the scientific field of economics, business and management is lacking in comparison to natural sciences research since there was less clusters connected with economics, business and management than natural sciences. This finding opens avenues to future research on the intersection of business studies and computer sci-

Table 2: Clusters from bibliographical coupling analysis

	Cluster	N°of items	Brief description
1	Cloud computing	30	The biggest cluster includes articles that refer to cloud computing. Choon Lee and Zomaya (2012, 269) write how "/c/loud computing has become a very promising paradigm for both consumers and providers in various fields of endeavor, such as science, engineering and business." Sood (2012) foresees cloud computing as a forthcoming revolution in information technology industry due to its performance, accessibility, low cost and many other luxuries.
2	Biodiversity	25	Cluster covers a broad range of articles that are connected with biodiversity such as topics that are connected with research on animals, plants and ecosystems.
3	Bioinformatics	24	Cluster covers areas that include articles such as Mass-spectrometry-based draft of the human proteome (Wilhelm et al., 2014), Unveiling the role of network and systems biology in drug discovery (Puyol et al., 2010) and PerM: efficient mapping of short sequencing reads with periodic full sensitive spaced seeds (Yangho et al., 2012).
4	Psychology, behaviour, personality	23	Personality constructs have been demonstrated to be useful for explaining and predicting attitudes, behaviors, performance, and outcomes in organizational settings (Onez et al. 2007). This cluster includes articles that cover areas such as climate change and personal motivation, personality, individual differences, individual differences in social media use, et cetera.
5	Big data, data analysis	22	Fosso Wamba et al. (2015) write that "/.../ big data has the potential to transform the entire business process /.../" and that big data "/.../ has recently become the focus of academic and corporate investigation." This cluster incorporates articles that cover the topics that research big data and data analysis topics.
6	Research on bats	21	This cluster includes articles that cover areas of biology, zoology, biometrics, wildlife management et cetera that is connected with an animal species bats.
7	Socioeconomics	20	This cluster includes articles that discuss topics such as cooperatives, social isolation and labor market insulation, social and environmental practices as a marketing tool, eco-innovations and corporate social responsibility.
8	Operations management	15	Vickery et al. (2003) write that integrated business processes – and not individual functions or systems - create value for the firm's customers and continue that these processes reach beyond the boundaries of the firm by drawing suppliers and customers into the value creation process.

ence. Some steps have already been made to this direction. For example, Holotiuk and Beimborn (2017) describe "Digital Business Strategy (DBS) as an emerging concept at the intersection of information systems and strategic management, which calls for contributions from academic research," and confirm that "/.../ guidelines for the development of DBS along with effective implications for the design of digital business models are still scarce in the academic literature."

With the opportunity to process and store the amount of data available on a massive scale at low cost, digitization has the capacity to make major changes and will influence almost any field of human labor that is somehow associated (directly or indirectly) with big data and cognitive non-routine operations (Rifkin, 2014). We want to point to three mechanisms: (1) centralized production, (2) increased harmonization of demand, and (3) erosion of property rights.

Centralized Production happens when companies exercise robotization and digitalization; consequently, companies can exercise centralism and economies of scale easier. However this can result into what has been known as a 'winner-takes-it-all' (Frank and Cook, 1995) or 'superstar' economy (Rosen, 1981).

Increased Harmonization of Demand this has high correlation with the trend of centralized production. Even though local preferences are still important, globalization is uniting tastes, habits and expectations. We can see that »/ …/ Internet and harmonized global demand requires less production and transport and hence less labor« (Loebbecke and Picot, 2015). While local preferences clearly still matter, global offerings are increasingly in demand. In the world of industry 4.0 the supply is approaching more accurately the demand, therefore organizations are more cost-efficient.

Erosion of Property Rights is occurring due to free flow of digital goods, many organizations argue about erosion of property right. Their argument is that the free flow of digital goods, whether it is authorized or unauthorized often leads to unwanted cheap or even free products (Loebbecke and Picot, 2015). A good example for the understanding the underlying problem is known as Tragedy of the commons (Hardin, 1968).

In what follows, we make informed predictions about future developments of this field of research based on our bibliometric analyses and describe them.

4.1 Digitization and big data analytics: the re-shaping of business models

A "/ …/business model describes the rationale of how an organization creates, delivers and captures value" (Osterwalder and Pigneur, 2010). The business model captures the core of the company's business logic. The industry 4.0 is challenging business models in many industries, hence established firms have frequently issues with embracing opportunities that digitization and big data bring with them. These companies struggle to adjust their business models to accept and integrate underlying mechanisms and other economic features (Westerman et al., 2014). With digitalization and big data science traditional hierarchical work structures fall apart and give opportunity to new increasingly flexible, in-house and networked structures (Zammuto et al., 2007).

Gradual improvements of already established business models based on big data science and digitalization target to optimize existing operations to augment overall efficiency and quality of produced goods and services. Digitalization and big data science have already disrupted traditional business models (Weil and Woerner, 2015). Low barriers to entry even mature markets and with that disrupting the business models of incumbent firms (e.g., Kodak and Snapchat for sharing photography, Lucas and Goh, 2009). They seize existing markets or try out unexplored entrepreneurial opportunities with new business models driven by big data science and digitization. They exploit digital social media channels, creating and serving new demands, introducing new forms of customer's involvement and relationships (Lucas et al., 2013).

4.2 Employment in Industry 4.0

A paramount industry, which we have to pay attention to, is robotization, since it presents a potential cause of unemployment (Guest, 1983, 510). The latter was written more than 30 years ago. The fact

is, that robots can execute almost all of our everyday tasks, but definitely cheaper (Appleyard, 2014). Nonetheless "/…/ it became clear that recent technological advances are such that they will disrupt the present market and offer new opportunities." (Micevičienė et al. 2013, 868). On one hand, in the last century or two, automation and robotization have taken many jobs, especially in farming, but on the other hand, have given many jobs in new fields. Some sort of robots or artificial intelligence will replace more than 70 percent of todays' jobs. Robots make almost no mistakes, are more cost- efficient and are beyond doubt, faster than humans (Kelly, 2016). Furthermore, it is unquestionably that in the near future, the white-collar jobs can be automated to a certain level as well.

According to Acemoglu and Restrepo (2017), a range of low-skill and medium-skill occupations exposed to automation have suffered employment declines and sluggish or even negative wage growth (Michaels et al., 2014). It is estimated that the percentage of various US classified occupations that are threatened by robotization is 47% in the next 20 years (McKinsey 2016). Back in 2007 we had almost 400 percent more robots in the US and EU than in 1993 (Acemoglu and Restrepo, 2017). The latter is implying a negative impact on certain low and middle-skilled job wages. It is a possible fearful future eruption of inequality, which can be managed by accurate policy actions. Companies are reluctant to invest in educating and training the workforce and simultaneously incapable of recruiting the skilled ones (Holzer, 2015). Meanwhile, automation has re-allocated or displaced some tasks and positions, but not necessary took jobs, rather created new ones due to spillover effects (IFR, 2017). Research from the Centre for European Economic Research discovered that the demand for labor has gone up by 11.6 million jobs from 1999 to 2010, which is predominantly due to digitalization (Gregory et al., 2016). Another research found that due to robotization, wages went up without having a significant impact on total worked hours. The more a country invests in robotization, the less it losses manufacturing jobs (Muro and Andes, 2015). Robotization obviously replaces labor, but at the same time complements it and augments the demand, the development of labor, and finally yet importantly, increases earnings (Autor 2015).

However, robotization effects on productivity, employment or other areas may vary within sectors, positions, skills or demographic elements. When robotization, "/…/ automation or computerization makes some steps in a work process more reliable, cheaper or faster, this increases the value of the remaining human links in the production chain." (Autor, 2015). All things considered, both BSG and McKinsey recommend that "/…/ businesses should review their organizations' activities to assess where potential value from automation is highest and create a strategic plan that includes both capital investment and reskilling workers." (IFR, 2017). Deloitte and McKinsey argue that organizations should also focus on STEM (science, technology, engineering and mathematics) skills and human competences, that cannot be substituted (creativity, empathy, etc.) (IFR, 2017). This paper presented arguments in favor of robotization: creating jobs and emphasizing a need for high skilled workers, while still recognizing the fear of unemployment and a decrease in wages. In other words, automation raises the working quality. The countries that invested in robotization for the last 14 years had a 10 percent growth of total GDP and benevolent forecasts for the future (IFR, 2017). We can conclude that automation is not the only factor for decline in specific jobs and the potential inequality this creates.

4.3 Robots as managers

Examining the main responsibilities of todays' managers, such as using data to assess duties, executing better resolutions than the employees, supervising the employees etc., technology is capable of tackling these core management responsibilities the same way as managers. Therefore, it is already playing important role in providing tools necessary for completing these problems more effectively (Chamoro-Premuzic & Ahmetoglu, 2016).

The perception of employees is that, as academic estimates indicate, 1 out of 2 managers performs poorly and insufficient (Robert et. al., 2015). The fact is that in the world of managerial performance, the robots or AI would not need much to outperform average managers. AI represents major threats for executives and managers. They are being forced to revise their own roles. Given the value that organizations are increasingly placing on experimen-

tation and collaboration, creative and social intelligence will undoubtedly grow in importance as AI will undoubtedly take on more rules- based responsibilities, due to increasing experimentation with creative and social intelligence (Williams, 2016).

People tend to personally attach to robots that they work closely with as if they were living beings and usually attach them emotions and personalities (Forlizzi, 2014). For manager to play an authority figure is to have the ability to dole out duties and a team to perform them. Nonetheless, if an AI or robot would be placed in managerial position would it have any authority over employees under it? Cormier et al. (2013) describe an experiment where they have tested how would employees obey robot managers versus human managers and the results were quite astonishing. Even though the person clearly had more authority with 86 percent of participants obeying all the way through to the 80-minute mark, 46 percent of participants did obey the robot until the end. The most unanticipated part of experiment was that people perceived a robot as if it was a person. They have also tried to argue, sway its opinion and proposed compromises. After the test, some participants have reported that they thought the robot might have malfunctioned. Surprisingly, they have still followed a potentially malfunctioned robot, even though they would rather not. The study is implying that robot managers may take at first at least a portion of simpler tasks (Young & Cormier, 2014). "Robotization, like past technological changes, can be a very good thing, relieving the workload of humans while helping overcome the many challenges the world faces. But it could also affect humans disastrously, dividing societies between the owners of the robots on one side, and the workers who compete with the robots on the other." (Freeman, 2016).

5. CONCLUSION

Robotization, automation, digitalization and the advancement and implementation of artificial intelligence will absolutely shape the strategic management we know today. Organizations will be spending its capital in a more lucrative fashion towards intangible assets, such as innovations and patent rights, knowledge, research and development due to the savings on labor. The avant-garde companies within the new technology area could seriously gain a competitive advantage over the competitors by applying idiosyncratic algorithms, evaluations and tasks internally on the workforce, as well as on organizations in the market. Having said that, the future strategic management will be more accurate, because of information liquidity and transparency, thus, make better decisions regarding business opportunities, potential threats and economic changes. Furthermore, middle or high-skilled positions could climb up the hierarchical ladder and refine the upper-management, which has a lack of incentives and understanding of the role of organizational structure and execution. The flip-negative side of the mentioned above could present image of strategic apathy and myopia inside an organization. Robots cannot provide an equanimity for humans, firms in downward and stressful times. Cannot be genuinely creative or compassionate and cannot give the benefit of the doubt, which in many cases empowers spontaneity, faith, hope and ambition.

EXTENDED SUMMARY / IZVLEČEK

Četrta industrijska revolucija je privedla do številnih novih področij raziskovanja, pri čemer področja managementa in poslovnih ved zaostajajo. Cilj pričujočega članka je prikazati povezave in skupne točke med področji v literaturi, identificirati glavne teoretične vnose v področje ter zasnovati informirane predloge za nadaljnji razvoj raziskovanja. Analizo izvedemo s pomočjo bibliometričnih metod: analize sosklicevanja (Small, 1973) in bibliografičnega parčenja (Kessler, 1963). Sosklic je opredeljen s frekvenco, v kateri sta dve enoti literaturi navedeni skupaj, medtem ko bibliografično parčenje temelji na številu navedkov, ki jih delita dva dokumenta, z namenom ugotavljanja podobnosti med

njima (Zupic & Čater, 2015). To nam omogoča identifikacijo najpomembnejših skupkov literature, kar prikaže, katera področja znanosti so najmočneje povezana z našimi izbranimi ključnimi besedami. Poleg tega bomo opisali prednosti, slabosti, vplive in potencialne implikacije procesov nove dobe robotizacije na spreminjanje poslovnih modelov ter organizacijskih struktur združb s posebnim poudarkom na strategijo podjetij in management v ozadju omenjenih procesov.

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Dynamic Relationships Management Journal

The Slovenian Academy of Management
The Slovenian Academy of Management
Kardeljeva ploščad 17
1000 Ljubljana
Slovenia

The Slovenian Academy of Management is announcing its

5th International Conference on Management and Organization to be held on June 14–15, 2018 at Brdo pri Kranju, Slovenia

Conference theme: MANAGEMENT AND ORGANIZATION IN THE DIGITAL SOCIETY

1. Main theme

The digital economy, also called the Internet economy, denotes a new environment for organizations that is based on digital computing technologies. As advances are made in these digital and especially social-collaborative technologies, firms, groups, and individuals need to become even more flexible and adaptive while capitalizing on the availability and diffusion of digital technology. This is leading to changes in organizational structures and processes in response to the new nature of work. The organizational processes, along with the nature and meaning of work, continue to develop, resulting in work becoming ever more granular, modular, and decontextualized. This development allows larger projects to be broken down into smaller tasks that can be distributed among a digitized workforce. These tasks can call for unskilled work such as what is frequently being requested and paid for at extremely low hourly rates via crowdsourcing platforms. Yet today's increasingly digitized workforce also includes highly specialized as well as creative and innovative labor due to improvements made in technology and organizational design (e.g. via platforms that enable instantaneous collaboration, joint remote work, and idea input from other stakeholders). One can also imagine that the majority of unskilled tasks will become automated and robotized, necessitating the even more prominent role of coordination and management. Due to these dramatic transformations in how work is being organized, the "digital workforce" and the "workplace of the future" were chosen as topics of recent editorials in both Human Resource Management Review (January 2015) and The Academy of Management Journal (Fall 2016). These contributions emphasized the relevance, timeliness, and crucial need for research on topics such as technology usage and generational issues, the role of information technology in decision making, new working arrangements, and organizing approaches that have emerged as a result of these advancements, and how technology influences the way work is structured and carried out. Most importantly, the key question is how structures and processes at the level and across levels of an organization, groups, and individuals should be designed and put into operation.

Research is therefore required about the effects of the changing workforce and its context at work. It is important to understand how digital and mobile technologies are shaping organizational phenomena, in particular the dynamic relationships between individuals at work. Entities accounting for the digital workforce's capabilities (i.e., flexibility, digital literacy, access to working platforms beyond the traditionally designated workplace) as well as the power of technological advancements, such as artificial intelligence, bring challenges, opportunities yet also demands for a radical change in organizational designs, structures, and processes. Adequate and rapid responses in these areas can benefit firms and institutions by increasing customer satisfaction, ensuring faster new product development with a shorter time to market, customization, innovation, and ultimately greater efficiency and effectiveness. However, it is important to also recognize the downsides of extensive technology use for concentrated and ever-present work with its reduced levels of job security, close relationships and the social aspects of digital work, fair pay, and effective collaboration. Research needs to examine the shaping conditions and effects of the growing use of technology by a digital workforce, and also to provide guidance on how best to utilize technology to meet organizational goals.

With technology unraveling many traditional forms of employment and organization, many questions remain about how organizations, but also the broader context of society, should coordinate fair exchanges between workers and employers, and help in shaping the dynamic relationships between them, and among the employees themselves. For employers, it is easy to misconstrue the digitized workforce (be it in the emerging micro-work space such as Mechanical Turk or in the platform micro-entrepreneurship space such as Uber) as a shapeless crowd of exchangeable and inexpensive workers instead of a community of skilled and valuable individuals. Positive attributes associated with these crowd-based forms of digital labor are "participatory", "peer-based", and "accessible". Digitized workers are in fact often self-employed. In the digital sphere, work relationships are becoming more flexible, fluid, and short-lived. Most digital service platforms function as spot markets, which impedes the establishment of substantial, long-term work relationships, and means work is organized in the way it was in the past. Temporary, part-time, remote, mobile, networked, and other nonstandard work arrangements are on the rise, once again contributing to the transactional nature of working exchanges resurfacing due to the lower transaction costs of performing work with digital tools. This provides challenges for organizing digital work in a humane and business-efficient way.

These contrasting views on how to organize in the digital society pose interesting challenges to the current theories and practices in management and organization. Established findings are hardly applicable to an emerging, dispersed, desynchronized and anonymized workforce. Moreover, given that crowdsourced digitized labor is a relatively recent phenomenon, at the moment there is little theory and research on the nature, desirability, advantages, disadvantages, and fairness of these emerging forms of work and ways of organizing it. Despite the importance of advancing our understanding of how we might better organize future work, research on these issues is rare. The conference's overarching goal is to extend our understanding of organizational structures and processes that coordinate work in the digitized economy, whether this includes classic, open, networked, and virtual organizational structures, the context and specifics of flexible working arrangements, or crowdsourced digitized workers.

2. Call for papers

Two sub-themes are proposed: (1) structures in the digitized economy; and (2) processes in the digital era.

1. The first sub-theme of our discussion focuses on **structures in the digitized economy**. Possible areas within this sub-theme are:

- Ecosystems and the institutional setting supporting the gig economy; labor policies, the roles of governments, organizations, and unions
- Platforms and crowdsourcing: meaning, forms, and manifestations (e.g., contractual, distributed problem-solving, solo, and reciprocal coordination), taxonomy

- Networked, mobile crowdsourcing tools, digital and IT infrastructures supporting the processes in the digital economy
- Organizational structures supporting digital work like the network organization, and open innovation systems, other changes in existing organizational structures
- Changes in the structure of collaboration among firms and institutions, networks, virtual structures, platforms for interconnecting different entities
- Alterations in the organizational structure of firms and institutions; the tasks, duties, responsibilities, and authorities of individuals
- Relational job design in the digital economy, stimulating perceptions of meaningfulness, social identity, and professional identity, fostering feedback, task complexity and balancing the effects of isolation and autonomy
- Desirability, fairness, and ethical issues related to piecework performed in crowdsourcing systems
- Contingency factors (related to the environment, firm strategy, technology and employees) of flexible work

2. The second sub-theme concentrates on **processes in the digital era**. Possible topics within this sub-theme are:

- Managing digital organizations (planning and controlling the digital business; planning, actuating, and controlling the digital organization)
- Changes in the role of corporate governance in the digital era (e.g., governance of platforms and ecosystems)
- Human resource management (HRM), HRM digital competency, virtual collaboration, and digitized HRM practices (training, coaching, performance management etc.) through electronic-HR, media properties/ affordances, virtuality, media richness
- The role of leadership and new leadership styles in a digitized or distributed workplace, leadership emergence, leadership substitutions, implicit leadership, leader-follower relations, triggers of leadership perceptions, and key leadership competencies and mechanisms in the digital age
- Communication in the digital workplace: horizontal, lateral communication, Information and Communication Technology, communication channels, tools, and means of communicating, gamification and enabled flexibility
- Motivating employees in the digital workplace: reward systems, intrinsic motivation, psychological motivation for performing crowdsourcing work (e.g., knowledge sharing or hiding motivation, feelings of pride and respect, prosocial motivation)
- Control mechanisms, monitoring relationships, the network effect, metrics, and approaches via digital means
- Shaping the organizational culture within organizations of the digital economy, development of an informal organization, values in the digital era
- Digital work in an international setting, diversity management, cultural dimensions (e.g. tightness-looseness), different development patterns, mechanisms, and outcomes across cultures, the effect of Internet penetration and other macroeconomic contextual factors
- Conflict management across the digitized workforce and the role of trust in building virtual relationships
- Project management, resource allocation, and task division within large-scale projects supported by IT
- The emergence of collective action and digital teamwork (virtual cooperation in teams, across teams, within the digital community) and the enablers and obstacles to organizational learning, and knowledge and ideas being transferred, generated (exploration, creativity), and implemented (exploitation, innovation)
- Employee well-being, labor fairness, and protection of workers' rights, implications for occupational health and safety, perceived organizational justice, and expectations
- Intergenerational issues related to digital work and the use of digital means at work

Papers and discussions will not be restricted to these issues; papers connecting the two streams are also invited. Papers from organization science, management, law, cognitive science, computer science,

information systems, and other fields are welcome since the conference promotes an interdisciplinary approach. Theoretical and empirical papers employing qualitative or quantitative methods, as well as work-in-progress, PhD research and practical cases are all welcome. Papers accepted for the conference are to be published in the **conference proceedings**. High quality papers will be considered for publication in either the special issue of the **Dynamic Relationships Management Journal** published by the Slovenian Academy of Management (SAM) or the Slovenian SAM journal **Management Challenges**.

3. Submission of abstracts and other important deadlines

Authors interested in participating at the conference are invited to submit an abstract. The abstract should not exceed 500 words and should include the names and affiliations of the author(s). It should clearly state the problem, purpose, and goals of the paper, the approach taken and the main contribution(s) made. Abstracts may be submitted as a .pdf file, .doc file or .docx file. The number of submissions is limited to one individual paper, one individual and one co-authored paper or two co-authored papers.

The **submission of abstracts** will take place via e-mail alesa-sasa.sitar@ef.uni-lj.si. More information on the conference can be found on the SAM's English Internet site at http://sam-d.si/En.aspx?cid=82. Where co-authors are involved, the information is only required for the main author (or one of the authors). However, the abstract should include all co-authors (their names, titles, institutions, e-mail addresses). You will receive immediate confirmation upon the successful submission of your abstract. If you have any problems, please contact us at: **alesa-sasa.sitar@ef.uni-lj.si**

After the abstracts have been received, they will undergo a review process and authors will be informed of their abstract's acceptance/rejection. Guidelines for preparing the papers and other information will then be given to the authors of the accepted abstracts. The submission of abstracts starts on October 11, 2017 and the deadline for submitting them is December 6, 2017. You will be informed about the acceptance of your abstract/paper by January 10, 2018.

Please note the following key deadlines:

- Formal announcement of the conference and call for papers: **September 2017**
- Submission of abstracts: **October 11 to December 6, 2017**
- Acceptance/rejection of abstracts: **January 10, 2018**
- Submission of papers: **April 11, 2018**
- Notification of acceptance of papers with reviewers' comments: **May 9, 2018**
- Submission of final papers: **May 23, 2018**
- Registration: **May–June 2018**
- Conference: **14–15 June, 2018**

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1. GENERAL INFORMATION

All articles submited to the Dynamic Relationships Management Journal are double-blind reviewed. The manuscript should be saved in Adobe Portable Document Format (PDF) and submitted per e-mail to the editor (matej.cerne@ef.uni-lj.si) or using a form on a journal webpage: www.sam-d.si/Drmj-Home.aspx. PDF files allow automatic file compression, file concatenation, and (more importantly) manu-scripts to have an identical appearance when viewed on almost any computer. Send two PDF files: one that contains author contact information along with the text, references, tables, figures, and exhibits; and one where author contact information will be deleted. Authors should keep an exact, extra copy of the manu-script for future reference.

Manuscripts are reviewed with the understanding that they are original, not under consideration by any other publisher, have not been previously published in whole or in part, have not been previously ac-cepted for publication, and will not be submitted elsewhere until a decision is reached regarding their pub-lication in the Dynamic Relationships Management Journal.

Manuscripts must be written in English. Authors are responsible for the quality of written English and proof reading of the text is required.

Manuscripts should be double-spaced (including references) in 12 point font, with pages numbered consecutively throughout the entire paper. (The title page is page one.) Text alignment should be justified. Margins should be one inch (2.5 cm) at the top, bottom and sides of the page. Manuscripts inclusive of all text, references, tables, figures, appendices etc. should be no longer than 30 pages and should not exceed 60.000 characters including spaces. Authors should provide longer summary (1-2 pp, depending on lenght of article), which will be published in Slovene (for foregin authors, translation will be provided by editors).

Manuscripts that report quantitative analyses of data should typically include descriptive statistics, correlation matrices, the results of statistical tests and so forth. If these items are not included in the man-uscript, they should be reported in a separate technical appendix. Authors of manuscripts that report data dependent results also must make available, upon request, exact information regarding their procedures and stimuli (excluding data).

If we receive files that do not conform to the above requirements, we will inform the author(s) and we will not begin the review process until we receive the corrected files.

The author(s) submitting the manuscript for review should clearly indicate to the editor the relation of the manuscript under review to any other manuscripts currently under review, in press or recently published by the authors. The editor may ask the authors to submit copies of such related papers to the Editorial Board.

2. GENERAL INSTRUCTIONS

1. First page: Name of author(s) and title; author(s) footnote, including present positions, complete address, telephone number, fax number, email address, and any acknowledgment of financial or technical assistance.
2. Second page: Title of paper (without author's name) and an abstract of no more than 250 words substantively summarizing the article. Also include up to six keywords that describe your paper for indexing and for web searches in your manuscript.

3. Next: Text alignment justified with major headings and subheadings flush with the left margin. The introduction should state clearly the objective of the paper as well as the motivation and the context of the research. The literature review should be limited to the articles, books and other items that have a direct bearing on the topic being addressed. In empirical papers, details of the empirical section tests should not be included in the paper itself. The conclusion should summarize key findings and state their importance to the field. Footnotes should be kept to an absolute minimum and must be placed at the foot of the page to which they refer. They should not be used for citing references.
4. Then: Tables, numbered consecutively, each on a separate page. If tables appear in an appendix, they should be numbered separately and consecutively, as in Table A-1, A-2, and so on.
5. Next: Figures, numbered consecutively, each placed on a separate page. If tables appear in an appendix, they should be numbered separately, as in Figure A-1, A-2, etc.
6. After conclusion: Longer summary (1-2 pp, depending on lenght of aricle) in Slovenian language (for foregin authors, translation will be provided by editors).
7. Last: References, typed in alphabetical order by author's last name and in APA style.

3. TABLES

1. The table number and title should be centered and placed above the table.
2. Source(s) should also be provided and centered below the table: i.e. Mabey & Gooderham, The impact of management development on perceptions of organizational performance in European firms, 2005: 136.
3. Designate units (e.g., %, $) in column headings.
4. Align all decimals.
5. Refer to tables in the text by number only. Do not refer to tables by "above," "below," and "preceding."
6. If possible, combine closely related tables.
7. Clearly indicate positions of tables within the text on the page where they are introduced: e.g. Table 1 about here.
8. Measures of statistical significance should be reported within the table.

4. FIGURES, PHOTOGRAPHS AND CAMERA-READY ARTWORK

1. For graphs, label both vertical and horizontal axes. The ordinate label should be centered above the ordinate axis; the abscissa label should be placed beneath the abscissa.
2. Place all calibration tics inside the axis lines, with the values outside the axis lines.
3. The figure number and title should be typed on separate lines, centered and placed above the figure.
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5. Clearly indicate positions of figures within the text on the page where they are introduced.

6. Once a manuscript has been accepted for publication, complex tables and all figures must be submitted both electronically and as camera-ready (hard) copy. Do not embed figures in the Word file; instead, submit them separately in the program in which they were created (i.e., PDF, PowerPoint, Excel).
7. Lettering should be large enough to be read easily with 50% reduction.
8. Any art not done on a computer graphics program should be professionally drafted in India ink.
9. Do not submit photographs or camera-ready art until your manuscript has been accepted. If the photograph or artwork is completed, submit copies.

5. MATHEMATICAL NOTATION

1. Mathematical notation must be clear and understandable. Since not all journal readers are mathematically proficient, the authors should ensure that the text (i.e., words) also conveys the meaning expressed by the mathematical notation. We recommend that extensive mathematical notation (e.g., proofs) should be provided in a separate technical appendix.
2. Equations should be centered on the page. Equations should be numbered; type the number in parentheses flush with the left margin. If equations are too wide to fit in a single column, indicate appropriate breaks.

   Unusual symbols and Greek letters should be identified by a note.

6. REFERENCE CITATIONS WITHIN THE TEXT

Cite all references at the appropriate point in the text by the surname of the author(s), year of publication, and pagination where necessary. Pagination (without 'p.' or 'pp.') to give the source of a quotation or to indicate a passage of special relevance, follows the year of publication and is preceded by a colon, i.e. Parsons (1974: 238). Page numbers should be given full out, i.e. 212-230 not 212-30. When providing quotes, these should be in italics. In general, references to published works must be cited in text according to the guidelines for APA style (for more see http://sam-d.si/drmj-about.aspx).

7. REFERENCE LIST STYLE

1. **Single Author:** Last name first, followed by author initials.
   Berndt, T. J. (2002). Friendship quality and social development. *Current Directions in Psychological Sci-ence, 11*, 7-10.
2. **Two Authors:** List by their last names and initials. Use the ampersand instead of “and.”
   Wegener, D. T., & Petty, R. E. (1994). Mood management across affective states: The hedonic contingency hypothesis. *Journal of Personality & Social Psychology, 66*, 1034-1048.
3. **Three to Six Authors:** List by last names and initials; commas separate author names, while the last author name is preceded again by ampersand.
   Kernis, M. H., Cornell, D. P., Sun, C. R., Berry, A., & Harlow, T. (1993). There’s more to self-esteem than whether it is high or low: The importance of stability of self-esteem. *Journal of Personality and Social Psychology, 65*, 1190-1204.

4. **Organization as Author**
   American Psychological Association. (2003).
5. **Unknown Author**
   Merriam-Webster's collegiate dictionary (10th ed.).(1993). Springfield, MA: Merriam-Webster.
6. **Two or More Works by the Same Author:** Use the author's name for all entries and list the entries by the year (earliest comes first).
   Berndt, T. J. (1981).
   Berndt, T. J. (1999).

   References that have the same first author and different second and/or third authors are arranged alphabetically by the last name of the second author, or the last name of the third if the first and second authors are the same.

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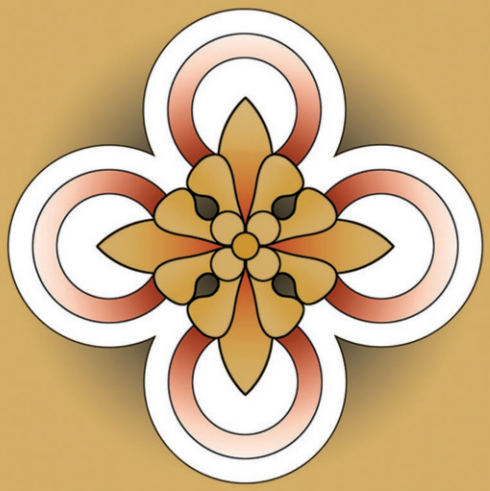

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