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THE REFINEMENT AND VALIDATION OF THE SOCIAL RESPONSE SCALE: THE CASE OF MULTINATIONAL CORPORATIONS OPERATING IN TUNISIA

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ABSTRACT: *Satisfying multiple stakeholder expectations and, in some cases, stakeholder issues is perceived as a major challenge the companies face. Despite this challenge, corporate social response activities have not been well documented in the empirical literature and have so far attracted relatively limited attention from researchers interested in the field (e.g., de la Cruz Déniz-Déniz, 1999; de la Cruz Déniz-Déniz & Garcia-Falcon, 2002). One of the main causes of this situation is closely related to the lack of a scale for measuring the social response activities among companies. In light of this gap in the corporate social response literature, the main objective of this study is to refine and validate the psychometric properties of a social response scale and to create a scaled-down version suitable for companies, and in particular for multinational corporations (MNCs). The refined scale is based on the prior literature and administrated to a sample of 251 subsidiaries operating in Tunisia. The scale has four dimensions. In quantitative analyses these dimensions highlight high reliability and satisfactory validity. Research contributions are provided based on the study findings. Limitations are also presented and discussed along with suggestions for research.*

Keywords: *multinational corporation (MNC), corporate social response, social issues, stakeholders, scale refinement and validation.*

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INTRODUCTION

Environments are characterized by multiple stakeholders where corporations struggle to deal with their social issues. While corporate social response is commonly associated with the nature of the social issue (Husted, 2000), a growing line of research attributes corporate social response to a set of social activities (e.g., Ackerman & Bauer, 1976; Arcelus & Schaefer, 1982; Amba-Rao, 1993). Research suggests that corporate social response falls under an umbrella term known as corporate social responsibility which is

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generally split into four categories, i.e. economic, legal, ethical and philanthropic (Sethi, 1979; Murphy, 1978; Carroll, 1991), with other authors claiming that it is a process and an implementation of activities (e.g., Preston & Post, 1975; Waddock, 2004).

The concept, although born more than 40 years ago (Arlow & Gannon, 1974), is still not well defined and therefore increasing attention must be paid to investigating it at theoretical, empirical and comparative levels. Extant research has described the processes used to respond to social issues and the various forms of corporate social response can take (e.g., Post & Mahon, 1980; Savage et al., 1991; Galbreath, 2006). Recently, few studies have focused on the determinants of corporate social response in the context of multinational corporations (MNCs) operating in developed countries and its role in establishing and maintaining social well-being (e.g., de la Cruz Déniz Déniz & Garcia Falcon, 2002; Borchani, 2010). But apart from these exceptions, insufficient empirical research on corporate social response has been conducted. The most common reason for this is the lack of an appropriate instrument. Therefore, we extend this line of inquiry through the re-examination of corporate social response and its measurement, building on the perspective of key stakeholders within a corporation.

According to the stakeholder perspective, stakeholder issues should not be seen in isolation but rather in conjunction with social practices and activities of MNC's subsidiaries (Park & Ghauri, 2015). Dealing with these issues thus involves a measurement instrument of corporate social response. Researchers that aim to develop a scale measuring corporate social response to social issues face several difficulties. A major difficulty that they continue to encounter is the limited body of literature directly linking MNCs and social activities. Quantitative research methodologies, by their nature, can be applied to only a large sampling of companies and therefore the process of collecting primary data is another challenge for researchers. In addition, researchers must also use available data, or research scale and this has proven to be difficult to find. Drawing on a bibliographic analysis of social practices studies, Park & Ghauri (2015) indicate that the existing literature that will aid in facing these difficulties is growing but still limited.

The most thorough works on this topic have been done by some researchers (e.g., de la Cruz Déniz-Déniz, 1999; de la Cruz Déniz-Déniz & Garcia Falcon, 2002) who have developed a 28-item scale measuring social response of MNC's subsidiaries. Overall, the social response scale is an excellent starting point for our study as it has some advantages. First, this scale is an up-to-date measure of MNC's behaviors in response to a wide range of social issues. Second, it is a multi-dimensional scale and should be conceptualized as such. Therefore it may properly reflect the overall level of MNC's subsidiaries social response. Third, it is easy to apply it consistently in the industries and MNC's subsidiaries that need to be studied.

The social response scale, while offering some benefits has limitations. This scale has been developed primarily by focusing on MNCs operating in one developed country, notably Spain. As efforts to develop a measurement scale of social response have been carried out in a developed country, the published literature does not exhibit a clear concern about

measuring social response activities among Spanish MNC's subsidiaries. This need to expand the context in which corporate social response is measured has been mentioned as a gap in international corporate social response literature. Furthermore, the 28 items for capturing the five dimensions have not been tested with confirmatory factor analysis (CFA) following currently advocated procedures. Thus, the fit of the 28-item original version of the social response can be improved by deleting scale items. This suggests the need to understand and measure the social response activities for the development of a shorter version of the social response scale. For these two reasons, some refinements of this scale appear necessary.

From a stakeholder theory, this study extends an understanding of corporate social response enabling managers of MNC's subsidiaries to satisfy multiple stakeholder expectations. Moreover, it re-examines a social response scale using CFA. Once this procedure is complete, this scale will be a useful tool for researching and investigating relationships between it and organizational outcomes (both economic and social). This study views corporate social response as an independent variable that will affect a variety of outcomes. Thus, its role is essential to gain more empirical knowledge about corporate social response. In addition, it offers an appropriate social response scale for MNC's subsidiaries operating in an emerging country –Tunisia. By proposing a conceptualization and a measurement instrument, one can make fine-gained recommendations to MNC's subsidiaries managers regarding ways to create and maintain social well-being. In other words, the social response scale serves as an organization-wide guide for leading them to make accurate decisions regarding stakeholder strategies.

Providing researchers and MNC's subsidiaries with a culturally appropriate social response scale represents an attempt to fill the gaps mentioned above. Understanding and measuring its activities are important for the refinement and preliminary validation of the scale measuring corporate social response. Therefore, the main objective of this study is to refine and validate such a scale and to create a scaled-down version that will be suitable for MNC's subsidiaries and can be used to deal with social issues. To attain this objective, it draws on the conception of corporate social response as forwarded by de la Cruz Déniz-Déniz & Garcia Falcon, (de la Cruz Déniz-Déniz, 1999; de la Cruz Déniz-Déniz & Garcia Falcon, 2002).

The remainder of the study is organized as follows. The relevant literature reviews are undertaken to examine the corporate social response and its activities in section 1. Section 2 presents research methods. Section 3 focuses on analyzing the results. Section 4 provides a discussion of these results. Section 5 outlines research contributions. Section 6 points out limitations of the study and directions for future research.

1. CORPORATE SOCIAL RESPONSE

The concept of corporate social response was introduced into Business and Society literature in 1974. Despite the increasing attention to this concept, a consensus amongst researchers as to a definition of the term has yet to be reached. Many definitions of corporate social response have been developed, each providing a slightly different perspective. Broadly conceptualized, corporate social response is used to refer to an organization's capacity to respond to social pressure (Frederick, 1994, p. 154). However, as Murphy (1987, p. 19) argued, corporate social response that is defined in terms of a reaction to stakeholder demands in diverse ways is a more positive and accurate concept than corporate social responsibility.

According to Walker & Parent (2010), some proponents of corporate social response (e.g., Carroll, 1979; Wartick & Cochran, 1985) used a scale reflecting four motives—reactive, defensive, accommodative and proactive—attributed to companies for adopting socially responsive behavior. Moreover, corporate social response is regarded as a managerial approach (Carroll, 1979) and related to other business-society concepts such as corporate social responsibility and corporate social performance (e.g., Wood, 1991; Clarkson, 1995). Later, Husted (2000, p. 29) re-conceptualized corporate social response as the mechanism to maintain or bring the company into alignment with its social environment. Waddock (2004) advocated for some functions that help companies implement social response activities of this mechanism/ process. These functions are (1) open dialogue, (2) ethical business involvement, (3) stakeholder relations and communication, (4) public affairs, and (5) issues management (see Table 1).

The Husted's (2000) definition is used to provide the conceptual framework for this discussion and analysis. This overview paper is organized according to the definition's focus on the ability of a company to set up a process for dealing with its social environment. From this theoretical perspective, it is assumed that the corporate social response construct is multifaceted and built around activities of social mission establishment, stakeholders' environment analysis, social response formulation, social response implementation and social response process control and its results (de la Cruz Déniz-Déniz, 1999; de la Cruz Déniz-Déniz & Garcia Falcon, 2002). These five social response activities should not be considered to be mutually exclusive to one another, but rather to provide a working framework through which the social response scale can be refined and validated. We believe companies use a combination of five activities to deal with stakeholder issues, suggesting that there are multiple ways by which they can be established. The following paragraphs merely illustrate short descriptions of each social response activity.

Table 1: *The differences between corporate social responsibility and corporate social response*

Corporate social responsibility	**Corporate social response**
Emergence	
1953 (Wartick & Cochran, 1985).	1974 (Arlow & Gannon, 1974).
Term synonyms	
Company's social obligation (Bowen, 1953; Sethi, 1990; Frederik, 1994).	- Managerial approach (Frederik, 1994) - Process and implementation of following activities: environmental assessments, stakeholder management, issues management and public relations management (Wood, 1991).
Determinant(s)	
Stakeholder issues (Carroll, 1979; David, Kline & Dai, 2005; Maignan & Ferrell, 2001).	Open dialogue, ethical business involvement, stakeholder relations and communication, public affairs, and issues management (waddock, 2004).
Arguments for	
Moral obligation, sustainability, license to operate and reputation (Porter & Kramer, 2006).	Gaining and sustaining a competitive advantage and facilitating corporate social responsibility (Friedman, Parent & Mason, 2004).
Types	
Economic responsibilities (To make a profit); Legal responsibilities (To respect laws); Ethical responsibilities (To be ethical); Philantrophic responsibilities (To be a good corporate citizen) (Carroll, 1979).	- Reactive, defensive, accommodative and proactive (Carroll, 1979; Wartick & Cochran, 1985). - Compromise, avoidance, defiance or manipulation (Olivier, 1991).

1.1. Corporate social mission establishment

The corporate social mission establishment is the first step of a corporate social response process. Its purpose is to involve a company in assuming social responsibilities. The corporate social mission establishment requires much dialogue between the company and its stakeholders (Morsing & Schultz, 2006). The corporate social mission is essential for the company setting up the social response process. In other words, it serves as a guide to formulating and implementing social plans, making assessment of these plans and determining what adjustments are necessary for them (de la Cruz Déniz-Déniz & Garcia-Falcon, 2002). As noted by some authors (e.g., Capriotti, 2011; Trapp, 2014), corporate social mission may also offer several other advantages such as consensual decision-making

and ensuring stakeholders support. However, the corporate social mission establishment is seen to be, more often than not, more complicated in the case of MNCs, as it is applied to local stakeholders in host countries as well as to MNC's subsidiaries (de la Cruz Déniz-Déniz & Garcia-Falcon, 2002).

1.2. Stakeholders' environment analysis

Once the corporate social mission is explicitly established, the company must analyze its stakeholders' environment. The environmental analysis involves the identification of the company's stakeholders and their social issues.

1.2.1. Identification of the company's stakeholders

To analyze its social environment, a company must begin with the identification of the stakeholders who have a 'stake' or an interest in its proper functioning (Freeman, 1984, 1999). The company has a variety of stakeholders such as customers, employees, shareholders, suppliers and government agencies. Stakeholders are "groups and individuals who can affect, or are affected by, the achievement of an organization's mission" (Freeman, 1984, p. 54). The range of relevant stakeholders is investigated through the use of several theoretical and empirical approaches. The descriptive approach being a basic framework starts from the assumption that the organization is a constellation of competing and cooperative interests. According to Donaldson & Preston (1995), this approach aims to describe the relationship between the company and its stakeholders.

Mitchell, Agle & Wood's (1997) proposed framework considers a set of attributes such as power to influence, legitimacy and urgency. Stakeholder classification which is then determined by combining them brings out three general categories: (1) definitive stakeholders who possess all three attributes, (2) expectant stakeholders who possess two attributes and (3) latent stakeholders who possess one. This has led researchers (e.g., Driscoll & Starik, 2004) to propose another attribute–proximity–in order to identify stakeholders and classify them into a fourth category, namely primary stakeholders. Specifically, Atkin & Skitmore (2008) apply an alternative typology of stakeholders categorizing them by distinguishing between internal and external stakeholders. Internal stakeholders include managers, employees and shareholders. External stakeholders are governments, competitors, customers and the media (Harrison, Bosse & Phillips, 2010; Laplume, Sonpar & Litz, 2008; Tang & Tang, 2012).

Savage et al. (1991) claim that stakeholders can be identified based on their possession of two attributes: (1) potential for cooperation between the stakeholders and the company and (2) potential threat. This typology provides the largest range of diverse stakeholders groups. However, Yang & Rivers (2009) delineate two broad categories of stakeholders: social and organizational. The social stakeholders consist of formal government institutions, the community in which the company operates or serves, Non-government organizations (NGOs) and industry bodies. This group of stakeholders

defines the company's social context influencing all companies operating in any country. The organizational stakeholders consist of consumers, shareholders, employees and parent firms. This group of stakeholders defines the company's organizational context affecting the specific company. In short, all these typologies base much of the assessment on managers' perceptions.

1.2.2. Identification of stakeholders' issues

Once the most important stakeholder groups are clearly identified, the company must determine each group's issues. Therefore, a clear distinction between different stakeholders should lead to a better assessment of social issues. Formal government institution-related stakeholder issues include compliance with the laws and tax receipts and other government issues. Community-related stakeholder issues encompass creating jobs for people living in the community, local sourcing, economic and social contribution to a region' development and philanthropic giving and other community issues. Non-government organization-related stakeholder issues include donations to social causes, employment of people with disabilities and the support of social projects.

Consumer-related stakeholder issues range from consumer declarations and expectations, to consumer safety and other consumer issues. Shareholder-related stakeholder issues encompass achieving profits, sustainable growth, long-term financial success, responsible investments and other shareholder issues. Employee-related stakeholder issues include corporate policies and practices toward union relations, working conditions, non-discrimination of employees, elimination of forced/child labor, remuneration policy and other human resources issues. Parent firm-related stakeholder issues include compliance with parent firm's requirements for social practices and activities, value creation and performance and other parent firm issues (Yang & Rivers, 2009; Lovett, Pérez-Nordtvedt & Rasheed, 2009; Mishra & Suar, 2010).

As part of this step, social issues are analyzed according to three attributes: scope, urgency and importance (Mitchell et al., 1997; de la Cruz Déniz-Déniz & Garcia Falcon, 2002). This can be achieved through considering social issues closely linked with the main activities of the company (e.g., production, marketing). Research in corporate social response suggests that another way of identifying stakeholders' issues types is through the construction of maps. It involves determining the impact of the current activities of the company on the social environment and the impact of this environment on these activities; monitoring trends, changing models and major value changes and establishing the impact of undertaken changes on the current and future activities of the company (Preston & Post, 1975; Post & Epstein, 1977; Arcelus & Schaefer, 1982). This stage, therefore, produces a rank ordering of social issues. Two other attributes should be considered when identifying stakeholders' issues: the area of society in which they are set- political, economic, environmental, social, cultural or legal as well as the level of demand stakeholders have – primary, secondary or tertiary (Wood, 1994; Frooman, 1999; Pomeroy & Douvere, 2008).

Thus, the company must satisfy the expectations of its stakeholders which are not of equal importance. Satisfying multiple stakeholder expectations, never an easy task, becomes exceptionally difficult in the case of MNC's subsidiaries. As there is a great difference between host-country stakeholders' expectations and those of the home country, subsidiaries which are part of a MNC are often faced with difficult decisions when choosing the most appropriate response to social issues (Polonsky & Jevons, 2009). Therefore, MNC's subsidiaries should take into account all stakeholders who affect their social practices saliently.

1.3. Social response formulation

The main purpose of social response formulation is to choose the most appropriate response and to formulate social plans and programs.

1.3.1. Choosing the most appropriate social response

Because stakeholders' issues may change over time, a company should remain an ongoing process allowing for strategy design to adjust as more is known about their evolution. In other words, the company must focus on developing an understanding of the expected future for the most important social issues and trends in the behavior of stakeholders to adopt the most appropriate response (de la Cruz Déniz-Déniz & Garcia Falcon, 2002). Much of the existing literature attempts to identify strategy typologies. Van Bommel's (2011) typology claims that a company can follow three strategies to deal with social issues, namely a resign strategy, a defensive strategy and an offensive strategy.

Along the same lines, some authors (e.g., Carroll, 1979; Wartick & Cochran, 1985; Sauser, 2005) show wide agreement in stating that strategies can be classified into four main categories, i.e. reactive, defensive, accommodative and proactive. However, Heikkurinen & Forsman-Hugg's classification (2011) suggests two possible social strategies, namely responsive and beyond responsive strategy. Some recent studies (e.g., Van Marrewijk, 2010; Van Bommel, 2011) also establish links between the social strategy types and several key factors suggested in a company's wider context. Typical factors of this kind include strategic guidelines, pressures and incentives. But in any case the social response chosen must reflect the values inspired from those of the corporate social mission (de la Cruz Déniz-Déniz & Garcia Falcon, 2002).

2.3.2. Formulating social programs and plans

To address social issues, a company establishes actions plans and tactics during the strategic social programming stage. Every involved unit must accept the plan in terms of actions proposed by the company (de la Cruz Déniz-Déniz & Garcia Falcon, 2002). This plan which represents the best fit between stakeholders' values, managers' values and social issues the company faces should be designed after the social objectives have been set (Stead, Stead & Gray, 1990). Therefore, it is necessary for the company to sacrifice the

content, the resources (e.g., financial resources, physical resources, human resources) and the time schedule in favor of socially responsive actions in the plan. As a result, an efficient allocation of all resources provides a means for this company to achieve its target social objectives (Logsdon & Yuthas, 1997).

1.4. Social response implementation

In order to implement the plan, a company must make decisions and develop activities. Therefore, several activities including –staff allocation, motivation and leadership, reward system and socialization of employees –need to be accomplished. The company can begin with human resource allocation (de la Cruz Déniz-Déniz & Garcia-Falcon, 2002; Logsdon & Yuthas, 1997). Once selecting the right people for the plan implementation as the selected personnel needs to have both a positive attitude toward social issues and the ability to do things.

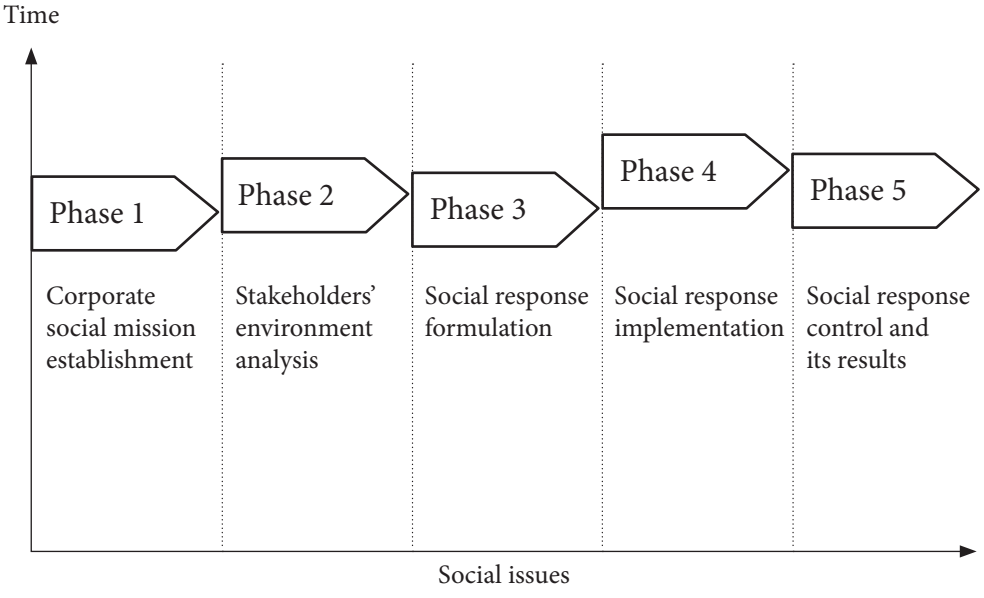
Motivation and leadership, in effect, identify four main roles that managers must play in implementing this plan, i.e. the visible support of the plan, the communication of the plan details to the personnel, the use of a two-way communication if the change presents threats and the information can be misinterpreted and the implementation of a reward system (Gray, 1981). The next stage, reward system, should allow the managers to compensate for the efforts of the personnel acting in the best interest of all stakeholders. Acknowledging sanctions by employees adds an important component to this system. Socialization is also recommended to ensure moral development of the personnel (Logsdon & Yuthas, 1997). Performing these activities is a continuing process that puts the previously defined social plans into practice (de la Cruz Déniz-Déniz & Garcia Falcon, 2002).

1.5. Social response process control and its results

Periodic controls of the social response process are essential to ensure the follow up of social objectives, the performance of the staff involved in the social plans implementation, etc. It is also important for the company to evaluate the effect of its social response activities on the stakeholders' environment (de la Cruz Déniz-Déniz & Garcia Falcon, 2002). After assessing the progress of the social response process, it can obtain information that will be published in an integrated report (IIRC, 2013). This information is very useful for the company that is trying to make necessary changes into any step of the process (de la Cruz Déniz-Déniz & Garcia Falcon, 2002). Another information gathering activity should take place. This company should develop an effective communication to know the viewpoints of all stakeholders (e.g., customers, suppliers, shareholders) on the results of the social response process (Lavallée & André, 2005; Morrison-Saunders, Baker & Arts, 2003; Loxton, Schirmer & Kanowski, 2013; Kohls, 1985; de la Cruz Déniz-Déniz & Garcia Falcon, 2002).

This gives a sequence of five social response activities with a conceptual representation, as delineated in Fig. 1.

Figure 1: *Proposed framework for corporate social response, figure adapted from de la Cruz Déniz-Déniz & Garcia Falcon (2002, p. 345)*



2. RESEARCH METHODOLOGY

To develop and validate the social response scale, the methodological approach appears to be useful in this study. Conducting this approach involves follow-up procedures advocated in the literature (DeVellis, 1991; Ping, 2004). Without the sample selection and the measurement of corporate social response, it will be impossible to study the psychometric properties of this scale (e.g., reliability, discriminant validity, predictive validity).

2.1. Research setting

Few works have tried to develop a psychometrically robust measure of corporate social response (e.g., de la Cruz Déniz-Déniz, 1999; de la Cruz Déniz-Déniz & Garcia-Falcon, 2002), and the literature is in its embryonic stage. To address this gap, the aim of this study is to provide a tool by which MNCs can deal with stakeholders' issues. As the social response scale will be subject to further assessment, there is a need to undertake a selection of subsidiaries from different kinds of industries. Given the variation of social activities in different sectors, the latter concern (focus on subsidiaries undertaking several sector operations) should not be ignored (Öberseder et al., 2014). The generalizability of the results is yet another basic reason behind the selection of sample through a multi-sector approach (Mishra & Shah, 2009; Huang, Kristal & Schroeder, 2008).

2.2. Research sample and data collection

The survey sample of this study includes MNC's subsidiaries which are located in Sousse, Tunis, Nabeul and Zaghouan. The main reasons for choosing these cities are not only the accessibility of subsidiaries, but also the facilitating data distribution and collection process. These subsidiaries operate in a variety of industries. In fact, the technique used to select such industries is the stratified sampling. This technique has clear advantages for the researchers, since it allows a greater degree of representativeness (Babbie, 1990) and consequently, a higher level of accuracy in estimating parameters (Nachmias & Nachmias, 2007). In this study, the frame from which the survey sample is drawn is stratified according to foreign direct investment (FDI).

The sampling frame for MNC's subsidiaries operating in the five industries with most investment consists of 58 subsidiaries from the energetic industry (e.g., oil and gas extraction industry, oil and gas refining industry), 247 subsidiaries from the mechanic industry, 233 subsidiaries from the electric and electronic industry, 1124 subsidiaries from the textile and clothing industry and 74 subsidiaries from the construction materials industry. To increase the response rate, the survey was conducted entirely through face-to-face interviews. A self-administered questionnaire was used and only translated from Spanish to French. The respondents were only managers who held different management positions in the foreign subsidiaries. The data collection process took place during the summer of 2011 and resulted in 265 completed responses. After eliminating fourteen cases, due to their inadequate completion of the research questionnaire, the final sample consisted of 251 subsidiaries.

In terms of representativity, this sample is composed of all the industries cited above. The biggest industry is that of textiles and clothing, representing more than 33% of the sample with 83 subsidiaries. The electrical and electronic industry and the mechanic industry, each accounts for about a quarter of the subsidiaries of the total sample, which is almost the same proportion (26%). Against all expectations, the energy industry includes only 9.6% and the construction and materials industry only 6%. Over 92% of MNC subsidiaries come mainly from European countries such as France, Italy, Germany, the UK, Sweden, Australia and Spain. Regarding the markets served, 44.6% of the subsidiaries are not focused on serving the host country. The average number of employees in these subsidiaries is 361 and the median is 70. Their median share capital was 850 million euro. Detailed characteristics of the sample are given in Table 2.

Table 2: *Sample descriptions*

Characteristics	**Study**	
	N	%
Home country		
Europe	231	92.2
North America	14	5.8
Asia	6	2.0
Market served		
Host country	139	55.4
Other countries	112	44.6
Sector		
Textiles and clothing	83	33.1
Electrical and electronic industry	64	25.5
Mechanic industry	65	25.8
Energy	24	9.6
Construction and materials	15	6.0
Size		
Fewer than 10 employees	29	11.5
10–49	67	26.6
50–199	100	40.0
More than 199	55	21.9
Share capital		
Less than 50 million euro	38	15.1
50–150 million euro	35	14.0
151–300 million euro	24	9.5
301–800 million euro	13	5.1
801–3000 million euro	18	7.1
3001–5000 million euro	17	7.0
More than 5000 million euro	106	42.2

2.3. Scale measurement

Some authors (e.g., de la Cruz Déniz-Déniz, 1999; de la Cruz Déniz-Déniz & Garcia Falcon, 2002) have developed the social response scale as a measure of socially responsive behavior related to MNC's subsidiaries. The social response scale was designed as a multidimensional, 28-item scale that assesses the effort MNC's subsidiaries devoted to performing five social response activities (see Fig. 1). In addition, these authors have investigated the relationship between the social response scale and a variety of variables (e.g., attitudes toward formulating social policies, legislation). Overall, results have been consistent with underlying theory and confirm the validity of the social response scale. They have also suggested that the social response scale has acceptable reliability. However, they did not make use of other known psychometric procedures and standards (e.g., convergent validity, discriminant validity) similar to those reported in other scale development studies (e.g., Webb, Mohr & Harris, 2008; Öberseder et al., 2014).

3. ANALYSES

To broaden our understanding of corporate social response as well as to bring needed attention to developing a reliable and valid scale measuring it, three studies are conducted. The first one focuses on refining scale items (study 1). However, the second methodological study aims to determine the dimensionality and reliability of the corporate social response (study 2). Finally, the third methodological study is concerned with checking convergent, discriminant and predictive validity of the scale (study 3).

3.1. Study 1: content validity evaluation and pilot testing

This stage of the study involves scale refinement. Following de la Cruz Déniz-Déniz & Garcia Falcon's (2002) preliminary five dimensional conceptualization of social response scale, a pool of items was generated: social mission establishment (6 items), stakeholders' environment analysis (6 items), social response formulation (6 items), social response implementation (6 items) and social response process control and its results (4 items). All five dimensions were combined with one another to form an overall measure of social response scale. Based on the conceptualizing and combining of these scale dimensions, content validity of the pool of items was then assessed by a group of four expert judges, academics and professionals. Both human judgment and ranking method were used to ensure consistent, quality scores. A priori items that got consistent scoring from at least three of the four judges were retained. In the end, this resulted in a total of 25 items remaining.

Next, the 25-item social response scale was incorporated into a questionnaire. The 25 items were measured using a five-point rating scale, anchored by 1 'no effort' and 5 'much effort'. Using a procedure recommended by Netemeyer, Bearden & Sharma (2003), a pilot survey was then conducted to test the questionnaire among a small sample (n = 31). Respondents were asked to assess items for clarity and conciseness. This process resulted in some items being rephrased and in the retention of all the items for further analysis. The third stage of this study involves further purification of scale items and an overall testing of the internal reliability for 25 items. As the overall measurement scale was judged too long for large-scale survey research, items with a corrected item-total correlation inferior to 0.5 were deleted, resulting in the elimination of four items. The 21 remaining items were then subjected to follow-up factor analyses. By using Cronbach's alpha, the internal reliability of the 21-item scale was acceptable (n = 31), which is in line with Nunnally's (1987) recommendations for scale refinement.

3.2. Study 2: exploratory factor analysis and internal reliability testing

As an initial step in examining construct dimensionality, two tests KMO (Kayser Meyer Olkin) and Bartlett were used to test the data adequacy for factor analysis. In this study, the KMO was very high at 0.95 and the Bartlett test of sphericity was significant at the

< 0.001 level, clearly indicating the appropriateness of conducting an exploratory factor analysis (EFA) (principal components analysis (PCA) with varimax rotation) on the 21 remaining items (Pallant, 2007). Next, factor loadings and communalities were also estimated in order to ensure that each item loaded on one dominant factor as well as one specific factor. The values of both parameters should be greater than 0.5.

Once the factor analysis revealed several factors, however, the items failing to exhibit simple structure on any factor should be eliminated. This study investigated the factor structure of the social response scale without identifying cross-loadings problems. The EFA applied to the remaining items was again used to examine the proportions of total variance and restrict the number of factors extracted. The items load on four distinct latent factors (factor loading above 0.6), accounting for 85.2% of the variance (see Table 3). The first factor included the stakeholders' environment analysis dimension and the social response formulation dimension (SEA & SRF), the second captured the social mission establishment dimension (SME), the third represented the social response process control dimension (SRPC) and the fourth reflected the social response implementation dimension (SRI). By using the EFA, we showed that almost all factors were confounded with those proposed in the theoretical model drawn from de la Cruz Déniz-Déniz and Garcia Falcon's (2002) study, except for the stakeholders' environment analysis dimension and the social response formulation dimension being merged together to report a significant relation to the underlying construct of corporate social response.

Internal consistency was firstly assessed using Cronbach's alpha. Secondly, assessment of internal consistency was based on another kind of indicator called composite reliability using a CFA. Cronbach's alpha is also distinguished from composite reliability. Unlike Cronbach's alpha, composite reliability provides an assessment of internal consistency without assuming unidimensionality (Webb, Mohr & Harris, 2008). As recommended for testing internal consistency (Gerbin & Anderson, 1988), composite reliability presupposes the inequality of items reliabilities.

We showed that a modest positive correlation exists between factors of corporate social response (SEA & SRF – SME, r = 0.582; SEA & SRF – SRPC, r = 0.553; SEA & SRF – SRI, r = 0.670; SME – SRPC, r = 0.620; SME – SRI, r = 0.537; SRPC – SRI, r = 0.647). These factors were not only conceptually and empirically distinct but also not highly intercorrelated. Therefore, the second order factor analysis was not performed (Anderson & Gerbing 1988; Doll, Xia & Torkzadeh, 1994) and the composite reliability for each factor was calculated.

Thus, internal consistency of four factors was assessed using two indicators: Cronbach's alpha and composite reliability (Nunnally, 1979; Hair et al., 1998). The Cronbach reliability values exceeded the acceptable threshold of 0.7: SEA & SRF = 0.97; SME = 0.96; SRPC = 0.96; SRI = 0.96. The composite reliabilities values also reached this threshold: SEA & SRF = 0.89; SME = 0.96; SRPC = 0.95; SRI = 0.96, indicating high reliability for all four factors.

Table 3: *The factor structure of social response scale (final sample, n = 251)*

Items[a]	Commu-nality	Factor 1	Factor 2	Factor 3	Factor 4
Social mission establishment					
26. To formulate a declaration of intentions for safeguarding society's well-being.	0.885		0.846		
25. To establish the specific obligations of the company towards its stakeholders (clients, employees...).	0.920		0.871		
27. To decide what budget will be dedicated to meet the society obligations.	0.901		0.835		
. To establish the operational area participating in fulfilling the obligations of the society.	0.927		0.863		
Stakeholders' environment analysis and social response formulation					
7. To consult publications for identifying the new demands emanating from the environment.	0.716	0.697			
9. To analyze the impact (present and future) of the stakeholders' demands.	0.784	0.730			
11. To put the stakeholders' demands in order of priority.	0.782	0.717			
12. To estimate the likelihood of new demands emerging from the stakeholders' environment.	0.809	0.723			
20. To establish the most appropriate answer to the stakeholders' demands.	0.801	0.802			
23. To specify the content, resources, duration, and person responsible for carrying out the social objectives.	0.833	0.783			
21. To formulate projects of staff training involved in the carrying out of social objectives.	0.832	0.801			
. To define evaluation systems for staff who participate in plans meeting the society obligations.	0.857	0.815			
. To define reward systems for staff who participate in plans meeting the society obligations.	0.831	0.802			
Social response implementation					
14. To form interdisciplinary work teams to identify social demands and to find responses to them.	0.857				0.803
15. To designate personnel who will be in contact with stakeholders.	0.881				0.815
17. To assign a central role to managers in the implementation of plans meeting the society obligations.	0.866				0.825
16. To communicate the social objectives and the plans to the whole organization.	0.892				0.830
Social response process control and its results					
3. To ask the managers for reports about their corporate social response contributions.	0.867			0.845	
1. To evaluate the personnel's performance in social response activities.	0.855			0.797	
5. To evaluate the suppliers' performance in terms of corporate social response.	0.888			0.815	
2. To learn the stakeholders' opinion about corporate social response.	0.904			0.837	
Eigenvalue		12.77	2.04	1.82	1.27
Explained variance (%)		29.32	18.72	18.63	18.5
Accumulated explained variance (%)	85.2				

[a] All items numbers are those in de la Cruz Déniz-Déniz & Garcia-Falcon (2002).

3.3. Study 3: measurement model validation and construct validity

As the exploratory results seemed reasonable and parsimonious, the 21 remaining items were subsequently subjected to further structural investigation using CFA. Prior to data analysis, Pearson's coefficient of skewness, Kurtosis coefficient and multivariate Kurtosis test were used to check the multinormality of the data. All items met or exceeded accepted standards for Pearson's coefficient of skewness. The calculated Kurtosis coefficient for each item was in the acceptable range, providing further support for the assumption of multivariate normality. Based on multivariate Kurtosis test, whereby the Mardia's coefficient for all items should be less than 3.

The calculated Mardia's coefficient for all did not fall below this threshold. Further procedure was therefore required before estimating the measurement model using maximum likelihood estimation (MLE). To do so, an initial examination of the factor structure of the social response scale was performed through Bootstrap method. It is an estimating process of the factor loadings, covariance between latent variables and error variances based on the resampling (Franco & Reisen, 2007; Yuan & Chan, 2008). The use of Bootstrapping is in no way an attempt to show the multinormality of the data, but provides a test to determine whether or not the multivariate normality assumption is violated.

After confirming the non-violation of the multivariate normality assumption, the measurement model was examined and estimated in AMOS 18. To test the robustness of this model, some fit indices were used. They must meet or exceed the cited and recommended standards (see e.g., Hair et al., 2010; Byrne, 2001). The Chi-Square test statistic ($\chi 2$) additionally divided by degrees of freedom ($\chi 2/df \leq 2.5$), the Comparative Fit Index (CFI ≥ 0.95), the Normed Fit Index (NFI ≥ 0.95) and the Root Mean Square Error of Approximation (RMSEA ≤ 0.06). However, the CFA showed a very poor model fit for the four-factor solution of the social response scale ($\chi 2 = 407.156$, df = 146, p = 0.000; CFI = 0.86; NNFI = 0.81; RMSEA = 0.085). Examination of the modification indices suggested the elimination of two additional items.

This process resulted in 19 items capturing four factors as follows: SEA & SRF (9 items); SME (4 items); SRPC (4 items) and SRI (4 items).The remaining 19 items were again tested with CFA resulting in a satisfactory fit of the data. The descriptive model fit statistics were $\chi 2 = 241.195$, df = 142 ($p < 0.01$); CFI = 0.984; NFI = 0.962, and RMSEA = 0.053, which are within the guidelines recommended by Hair et al. (2010). The CFA results indicated that four factors are useful in terms of understanding the corporate social response construct.

Following the suggestions of Fornell & Larcker (1981), the average variance extracted (AVE) was used to test convergent validity. It is calculated as the sum of the item standardized loadings squared divided by the sum of the item standardized loadings squared added to the sum of the item error variance. The AVE must be greater than 0.5 (Hair et al., 1998). The calculated AVE for the four factors exceeded the recommended threshold of 0.5: SEA & SRF = 0.55; SME = 0.87; SRPC = 0.84; SRI = 0.85. In addition, as recommended by

Fornell & Larcker (1981), the discriminant validity is checked if the AVE is more than the square correlations between each pair of factors in the model (for similar approaches to construct validity, see e.g., Kaptein 2008). All AVE values were also very good ranging from 0.55 to 0.87, whereas all interconstruct correlations were between 0.3 and 0.46 (see Table 4); this is an indicative of distinct social response factors.

Table 4: *Correlations between the factors, square root of AVEs and standard deviations*

	SME	SEA & SRF	SRI	SRPC	Standard deviations
SME	**0.93**[a]				1.28
SEA & SRF	0.34	**0.74**			0.91
SRI	0.3	0.46	**0.93**		1.24
SRPC	0.4	0.31	0.44	**0.91**	1.24

Notes: The bold numbers in the diagonal row show the square roots of AVE.

Data obtained from the same sample (n = 251) were used to gain further insight into predictive validity of the social response scale as well as to allow further examination of the generalizability of this factor structure. Predictive validity aims at how well the focal construct is predicted by other measures for which a relationship can be theoretically deduced (Bagozzi, 1994). To do so, measures for two conceptually related yet distinct constructs were included in the questionnaire, namely proactivity and reactivity in the formulation of social strategies (de la Cruz-Déniz Déniz & Garcia Falcon, 2002). Proactivity is conceptualized as "the degree to which behavior is planned in anticipation of emerging economic, technological, social or political trends and in the absence of crisis conditions" (Burcke & Logson, 1996, p.498).

In the strategic literature, it is almost universally agreed that proactivity appears to be important in planning. According to Frederick (1994), more proactive is the firm which adopts an anticipatory scanning procedure to detect emerging problems. The level of proactive social strategy followed by a firm is largely dependent on the social mission, social strategy, organizational budget, organizational systems, managerial responsibilities and social decisions (e.g., Amba-Rao, 1993; Wykle, 1992; Merenda, 1981). Compared with reactivity, proactivity has two important advantages which are applicability and profitability (Carroll & Buchholtz, 2009). While the reactive approach is helpful for formulating and instituting actions after social event has taken place, the proactive approach is more relevant if one's interest is to anticipate the change in the stakeholders' environment (Rupp, 1994). Based on this, the following hypotheses are advanced:

H1. *Proactivity has significant positive effects on the adoption level of social response activities by MNC's subsidiaries.*

H2. *Reactivity has significant negative effects on the adoption level of social response activities by MNC's subsidiaries.*

In addition to the social response scale, the questionnaire included two items, one measuring proactivity and the other measuring reactivity. These two items were adapted from de la Cruz Déniz-Déniz (1999). The final test employed in this study was to assess whether proactivity and reactivity are significant predictors of social response activities of MNC's subsidiaries. At this stage, predictive validity of the social response scale was initially examined with correlation analysis. As hypothesized, proactivity was significantly positively related to all four factors: SEA & SRF ($r = 0.22$, $p < 0.01$); SME ($r = 0.11$, $p < 0.1$); SRPC ($r = 0.14$, $p < 0.05$); SRI ($r = 0.19$, $p < 0.01$).

Similarly, reactivity was also significantly associated with all factors: SEA & SRF ($r = - 0.20$, $p < 0.01$); SME ($r = - 0.21$, $p < 0.1$); SRPC ($r = - 0.17$, $p < 0.01$); SRI ($r = - 0.16$, $p < 0.05$), indicating strong support for H1 and H2. To further assess predictive validity structural equation modeling (SEM) was used. Due to the presence of multicollinearity problem with covariance-based structural equation modeling (CBSEM), a partial least square (PLS) regression was subsequently adopted. The adjusted R^2 of 0.33 suggests that a significant proportion of the variation in corporate social response is accounted for by proactive and reactive approaches. In support of H1, the findings show that proactivity was positively associated with subsidiary's adoption of social response activities, particularly SEA & SRF ($\gamma = 0.22$, $p < 0.1$) and SRI ($\gamma = 0.21$, $p < 0.1$). Additionally, reactivity had significant negative correlation with SEA & SRF ($\gamma = -0.26$, $p < 0.1$) and SRPC ($r = - 0.21$, $p < 0.01$), but not SME and SRI.

Figure 2: *Scale refinement and validation process*

Stage 1 Item generation	**Literature review** International corporate social response Total number of items after item generation = 28
Stage 2 Content validity jugement	**Expert judges** with 4 academics and professionals Result: suppression of 5 items + division of some items into additional sub-items Total number of items = 25
Stage 3 Pilot test and initial purification	**Mini-survey** with 31 subsidiaries' managers Result: suppression of 4 items + reformulation of some items Total number of items = 21
Stage 4 Further purification	**Face-to-face survey** with 251 subsidiaries' managers Result: suppression of 2 items Total number of items = 19

4. DISCUSSION

Given the current world-wide, high level of interest in and concern about the demands' internationalization of the stakeholders, the global society wants MNCs to behave more socially responsive. Due to this fact, more MNCs have become aware of the necessity of engaging in the corporate social response. In Spain some authors (e.g., de la Cruz Déniz-Déniz, 1999; de la Cruz Déniz-Déniz & Garcia-Falcon, 2002) have developed a scale measuring the corporate social response based on previous studies. Outside the context of Spain, this scale must be refined and updated for use, in particular, with subsidiaries' managers in Tunisia, an important African business centre being viewed as a radically different sociocultural context from that of Spain.

In the theoretical literature, increasing attention is paid to corporate social response. Despite such corporate efforts to explore corporations' response to social issues, research on corporate social response has been scarce in terms of its measurement. Thus, one of the objectives of the present study is to develop a shorter version of the social response scale in the Tunisian context. Building on the existing literature, this study re-examines corporate social response and describes the process used to refine and validate the social response scale to measure it.

Based on a series of three studies, integrating a range of methodologies, this research suggests that corporate social response is a multidimensional construct. To develop a shorter version of the social response scale implies that the CFA model would be fitted to the data. Another approach to validity assessment is the updated social response scale convergency with and divergency from other scales. All of the undertaken studies used recognized psychometric procedures and standards available in other scale development works (e.g., Webb, Mohr & Harris, 2008; Öberseder et al., 2014). The research findings show a reliable and valid measure.

Four unidimensional factors of corporate social response that emerged are labeled as follows: stakeholders' environment analysis and social response formulation, social mission establishment, social response implementation and social response process control. These factors of the social response scale share some consistent scores with the dimensions identified in de la Cruz Déniz-Déniz & Garcia Falcon's (2002) study, which help establish the utility of the social response use in MNC's subsidiaries. This research has generally broadened our understanding of corporate social response as well as drawn the attention of managers to a strategy engagement that goes beyond simply financial results.

In addition to maximizing shareholders profits, subsidiaries' managers maintain organization competitive advantages which derive from social response activities and which, in turn, depend largely on satisfactory fulfillment of stakeholder expectations in host countries. In particular, subsidiaries' managers realize different types of benefits by focusing on key stakeholders: consumers (e.g., consumer loyalty, enhanced brand image, reputation), employees (e.g., employee satisfaction, job commitment), suppliers

(e.g., increased ability to establish good supplier relations), shareholders (e.g., continued commercial cooperation and business relationship; decreased long-term level of risk on the investment, improved financial performance), local community (e.g., decreased regulatory burdens, improvement in the quality of local labor), parent company (e.g., obtaining internal legitimacy) and local governments (e.g., obtaining external legitimacy, building strong local relationships) (Yang & Rivers, 2009; Park & Ghauri, 2015).

In order to secure their advantages, subsidiaries' managers must undertake many essential locally based actions including making resources and processes investment in relationship with stakeholders and avoiding conflicts with them. Through these actions, MNC's subsidiaries become more socially responsive. That is, MNC can be regarded as a valuable associate with consumers, suppliers and local governments, as a good employer for employees, as a profitable and sure investment for shareholders, as a good corporate citizen for the communities in which MNC operates, etc (Park & Ghauri, 2015).

Subsidiaries' managers consider the social response scale to be useful in dealing with a wider range of social issues (e.g., protection of the environment, recycling behavior). Further, the importance placed on the social response scale in dealing with social issues is greater for proactive MNC's subsidiaries. It should be noted that the objective of this study is to refine and validate the social response scale for use in MNC's subsidiaries operating in five industries with most investment. However, based on ANOVA test, we recognize that the analysis at the industry level is not useful in understanding either the differences in subsidiary's social response, or the social response scale validation across sectors.

5. THEORETICAL AND PRACTICAL CONTRIBUTIONS

Based on data analysis, the findings represent an initial effort in the refinement and validation of the social response for use by MNC's subsidiaries in the Tunisian context. It seems, therefore, that the refined scale has several advantages. Data are gathered from face-to-face interviews with subsidiaries' managers in order to develop a new scale that reflects their current social concerns. Refining a scale of corporate social response allows us to better understand its manifestations in the Tunisian context. The primary contribution to general corporate social response literature is the refinement of a social response scale that captures the views and perceptions of subsidiaries' managers. This scale is multidimensional and has a complex and multifaceted conceptualization.

After initiating the scale refinement and validation process, this study also confirms the structure of corporate social response and shows that the social response scale is generalizable across industries. This means that this tool is applicable to a wide variety of settings. Because of their daily exposure to unpredictable events in their task environment (e.g., stakeholders), managers need the social response scale to face them. According to Polonsky & Jevons (2009), MNC's subsidiaries encounter difficulties when responding to social issues. To overcome such difficulties, the social response scale appears to be a good starting point for MNC's subsidiaries.

In addition, the finding that the refinement of a multidimensional scale contributes to address issues of all stakeholders helps guide MNC's subsidiaries in their institution of social response activities. This effort recognizes the rich and multidimensional character of the social response scale and the result here suggests that the tool contains a wide range of social response activities relevant to MNC's subsidiaries. Research needs to explore the benefits that the social response scale provides for MNC's subsidiaries, and specifically, the use of this scale as a strategic tool.

6. LIMITATIONS AND RESEARCH DIRECTIONS

There are several limitations to be noted. First, although a review of literature highlighted several policies of the proper development, evaluation and use of the questionnaire – the back-translation, the decentering, the committee technique and the parallel-blind translation (Cateora, 1996), only direct translation was used to develop the questionnaire. Perhaps the way in which the questionnaire was initially developed was inappropriate. Future research could also address this limitation of the present research by using the back-translation which is the best practice recommended by Maignan & Ferrell (2000).

Second, findings demonstrated convergent, discriminant and predictive validity through the testing of convergence and discrimination (both within the scale and among developed scales), correlational analysis and the PLS regression. To enhance the predictive validity (e.g., Bagozzi, 1984; Netemeyer, Durvasula & Lichtenstein, 1991), the social response scale could be used in future studies to appropriately assess the impact of the corporate social response on variables such as corporate social performance. By testing the result of the corporate social response, our understanding of the phenomenon of social involvement of MNCs could be extended.

Third, survey data having been gathered from the same source may have an impact on the results produced. In order to minimize common method bias, several precautions were taken such as the protection of respondent anonymity and the ensuring of the clarity and unambiguity of all scales items (Podsakoff et al., 2003), but this is not sufficient. To remedy this limitation, future research could use a Multitrait-Multimethod (MTMM) model to better check the common method bias.

In addition, the social response scale may also have its application in the Tunisian context. Future research should consider replicating the factor structure among other nations, cities and regions. Differences observed across regions allow researchers to achieve greater insight into the refinement of the social response scale. Furthermore, longitudinal research could be used to empirically verify whether the social response scale is evolving over time. Other key variables may also be studied through the examination of the social response scale. Although researchers (e.g., de la Cruz Déniz-Déniz & Garcia-Falcon, 2002; Borchani, 2010) have paid attention to the corporate social response, we know very little about its antecedents.

Finally, future research seems interesting and insightful in trying to answer the following questions: When the MNC uses the corporate social response? What types of response it can provide to deal with the foreign stakeholders' issues? How does the social response change over the time? What are the criteria to be taken into account when choosing the corporate social response?

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INCORPORATION OF SUSTAINABILITY INTO LEADERSHIP DEVELOPMENT

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ABSTRACT: *The purpose of this paper is to investigate implications of integrating sustainability for leadership development. We identify components of sustainable leadership development, including care for individual, organizational, social, and natural well-being. We also examine how the incorporation of sustainability influences leadership development. This study upgrades existing sustainable leadership development theory by considering the process how integration of sustainability affects leadership development by incorporating a wider range of leadership influence. Therefore, this study is novel in presenting an alternative to the majority of prior studies that focused on a more limited influence of the leader, whereas our study proposes sustainable leadership development based on symbiotic capital.*

Keywords: *sustainability, mission, sustainable leadership, case study, leadership development*
JEL Classification: M1; M12
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INTRODUCTION

The research subject of this paper refers to the implications of integrating sustainability into a company's mission for leadership development. We asked ourselves whether sustainable leadership development is a result of the influence of the compay mission, of the systematic and organized activities, or both. Sustainability has attracted growing attention in the practical and theoretical spheres in recent years. We argue that implications of sustainability for leadership development have become more evident as a consequence of changing business environment challenges (natural disasters, recession, ethical crisis). In times of uncertainty, the need to systematize activities to enable sustainability becomes even more important. Also, the need for intergenerational solidarity becomes more evident. Contemporary organizations face challenges posed by constant change, natural disasters, civil riots, globalization, increasing cultural differences, and constant need for efficiency and achieving ambitious goals on a daily basis, which causes turbulent velocity of competitive action and poses a direct challenge to employee well-being and an indirect challenge to organizations, society, and the natural environment. Under daily pressure to achieve innovative results, it is easy to forget that organizations are human communities and, as such are incurred because a sufficient number of people have expressed concern to achieve commonly desired goals (Senge et al., 2008). The emergence of changes in the

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global business environment has transformed the dynamic of leadership development. The focus of the paper is the whole process of including sustainability in a company's mission that, in the end of this process, also transforms the dynamics of leadership development into sustainable leadership based on the definition of the Institute for Sustainable Leadership (2015). Incorporation of the sustainability mission contributes to collective leadership development through taking into consideration the interests of not only internal stakeholders of the company but also wider external stakeholders. Leadership is a social process that depends on leaders and followers (Lord and Maher in Lord, Brown & Freiberg, 1999) where the dynamics of leadership development represents not only leaders influencing followers but also the effects of followers on the leader (Lord, Brown & Freiberg, 1999). Sustainable leadership considers leaders and followers as stakeholders that share and distribute their influence into the natural and social environment. The future impact of their decisions is at the center of their attention. Rapid transmission of information, economic and political uncertainty, and a rapidly growing global market threaten the ability of individual managers to face all challenges successfully; therefore, it is necessary to develop collective leadership skills (Cherniss, Grimm & Liautaud, 2010), which are the central focus of sustainable leadership development. Sustainable leadership development is carried through instruction and experience gaining in synergetic interactions with the social and natural environments (Bergsteiner, Avery & Neumann, 2010).

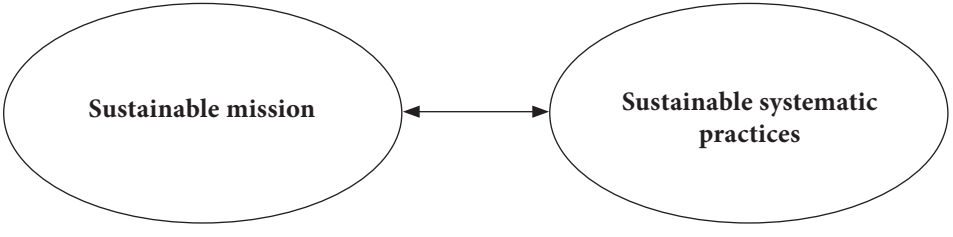
Leadership is a process (Morgeson, Lindoerfer & Loring, 2010) and source of competitive advantage (Graen, Rowold & Heintz, 2010); therefore, investing in its development is vital for organizations (Hrivnák, Reichard & Riggio, 2009). Leadership capability, as well as intellectual ability, was initially conceptualized as an inherent trait (Chemers, 2002). Developing leadership competencies was subsequently narrowly focused (Quatro, Waldman & Galvin, 2007); however, contemporary leadership scholars (Bennis & O'Toole, 2005; Ghoshal, 2005; Hollenbeck, McCall & Silzer, 2006) have emphasized the need to reform leadership development and the disparity between practical development techniques and scientific findings (Carroll, Levy & Richmond, 2008).

Because leadership development is the least developed field in the framework of leadership theory, sustainable leadership development models need to be developed comprehensively (Avolio, 2011). Research integrating the values of contributing to the welfare of the Earth at an individual level within organizations is modest; however, even less is known about the ecological effect of voluntary participation of employees in environmental management research (Lülfs & Hahn, 2013). In practice, however, many specific master's programs (e.g., University of Cambridge) and specialized corporate academies (e.g., Faculty of Economics, University of Ljubljana) develop competencies of sustainable leadership. Practical implications (Taleo, 2011) of the »*baby-boomers*« generation retirement and demonstrated leadership crisis during the recession even strengthened the importance of integrating sustainability into a company's mission and developing sustainable leadership (Strang & Kuhnert, 2009).

Intergenerational development goals mean implementing the principle of sustainability as a quality measure in a wide field of development. Casserley and Critchley (2010) claimed

that sustainability has never been so important as it is in contemporary society; therefore, the study of leadership needs to move toward a larger, all-encompassing perspective of the world in which we live, and adopt a sustainable approach to developing leaders. Although sustainability is gaining attention as a value, little is known about sustainable leadership development in the business environment. Hargreaves (2003, 2007) presented sustainable leadership in educational environments; however, sustainable leadership theory still needs to be conceptualized and research needs to be conducted as to how the process of sustainable leadership development is carried out in business settings. Hargreaves (2007) defined sustainable leadership as maintaining and developing in-depth learning in a way that does no harm, but rather generates positive effects for all stakeholders, present and future. The Institute for Sustainable Leadership (2015) stated that sustainable leadership is presented in »behaviours, practices, and systems that create enduring value for all stakeholders of organizations, including investors, the environment, other species, future generations, and the community«. Our paper aims to provide an understanding of the process that starts with stating the sustainability mission and implementing it through the leadership tools (such as, experience-based learning, mentoring, coaching, integration into local community, teambuilding with prosocial behavioral components, and feedback component of all activities within the Re.think initiative). It is a matter of a dynamic process and cyclical relationship. Company's sustainability mission needs to be supported with sustainable systematic practices (Figure 1).

Figure 1: *Sustainable leadership development*



Longitudinal sustainable leadership development in a case study, company Si.mobil, that expanded its environmental influence toward local and global stakeholders, such as Telekom Austria Group, is presented. Company Si.mobil's Re.think initiative represents the philosophy of reconsidering all activities toward responsible living.

We investigated Si.mobil's activities within Re.think's sustainable leadership development and established that the year 2008 was the beginning of a systematic and organized effort to implement sustainability in its mission and execute it through sustainable leadership development, firstly within their Eco team and afterward through different Re.think activities, in and out of company borders. The main research question was as follows: How does a sustainability mission influence the implementation of leadership development tools, especially with respect to how it influences future generations? This paper discusses the evolution and vital dimensions of sustainable leadership development in the presented case study.

1 THEORETICAL BACKGROUND

Conceptual evolution of the leadership theory takes place from the theory of a great leader, which stresses the qualities a leader needs to be successful and includes modern definitions of transformational leadership theories, such as authentic leadership (Avolio & Gardner, 2005), which argues that a leader must behave authentically in all circumstances (Clapp-Smith, Vogelgesang & Avey, 2009). Sustainable leadership also stems from transformational leadership theory based on the value of sustainability. The theory of leadership development (Lord & Hall, 2005) has advanced and assumes that changes in leadership skills are understood in the terms of the general theory of learning and the acquisition of expertise and consideres changes in information processing and knowledge structures that occur when skills are being developed. McCauley, Kanaga and Lafferty (2010) stated that leadership skills are developed by learning from experience and reflecing on development processes (McCauley, Van Velsor & Ruderman, 2010). Cunliffe (2009) added that developmental experiences derive from evaluation and enable challenges and support participants in the developmental process in a way that this process occurs through involvement in the wider environment.

Day and Harrison (2007) claimed that leadership development is theoretically weak. Leadership development is an extension of the collective capability to form orientation, alignment, and commitment, which means changing beliefs and practices (Drath, Palus & McGuire, 2010). Leadership development theory (McCauley in London & Maurer, 2004) also emphasizes developmental experience and learning opportunities, the ability of learning and motivation, personal attitudes, skills, and organizational support for this development, which includes a number of contextual factors, such as leadership development methods (Lord & Hall, 2005). Conger (in Sinclair, 2009) identified several approaches to leadership development, including a conceptual approach, development of skills, personal growth, and programs that emphasize on feedback.

Review of contemporary leadership development (Day, 2001; Day et al., 2014; Mumford & Manley, 2003; Mumford et al., 2012; Gagnon, Vough & Nickerson, 2012) demonstrates a pragmatic approach (Mumford et al., 1993) with an emphasis on techniques that lead to the acquisition of individual leadership skills. A key reason for the leader development crisis (Probert & James Turnbull, 2011) is a focus of leader competence frameworks on measurable, objective, technical and tangible aspects of leading (Carroll et al., 2008; McCauley et al., 2010), which do not consider subtle, moral, emotional, or social aspects of leadership development (Bolden & Gosling, 2006). Mumford and Manley (2003) indicated that a mechanistic focus of leader development was alarming and emphasized that a broader theoretical framework is needed. In accordance with their call to the research community to produce a theoretically-based approach to leadership development, we contextualized sustainable leadership development. By addressing Fulmer's model (1997, p. 60) of the evolving paradigm of leadership development, we position sustainable leadership development as highly concerned with action of today that will impact the future (Table 1).

Table 1: *Sustainable leadership development as future paradigm*

	Past	**Future**
Participants	Listener	Learner
Program design	Event	Ongoing process
Purpose	Knowledge	Action
Period	Past	Future
Players	Specialists	Partners
Presentations	Style	Process/Outcome
Place	University campus	Anywhere

Source: R. M. Fulmer, The Evolving Paradigm of Leadership Development, 1997, p. 60.

Sustainable leadership development is based on experiences that build community, foster collaboration among stakeholders, and promote long-term value (Avery & Bergsteiner, 2011b) that we perceive as a new form of capital - symbiotic capital which means the advancement of human and social capital together with natural capital. Sustainable leaders integrate human and social well-being with consideration for the natural environment. Creativity is embedded in achieving this demanding and long term mission of connectivity. If we consider the interconnection of social and natural elements in the business model we come to the realization that symbiotic capital – due to the relational complexity – needs to be extensively considered. Contextualization enables relevance of the conducted research, and personalization enables sensemaking for the people involved in the process (Petriglieri, 2012). Sustainable leadership development needs to be derived from stakeholders' needs; therefore, it is always contextualized. In some cases, it is focused more so on the social environment and, in other cases, on the natural environment if the context demands such development of sustainable leadership.

Social capital is defined as »the norms and networks that enable people to act collectively« (Woolcock & Narayan, 2000, p. 225). Galli Bilhuber and Müller-Stewens (2012) shift focus from the emphasis of human capital in leadership development toward the development of social capital. They assumed that social capital develops through the stages laid down by contact, assimilation, and experiences of identification, and that the practices of leadership development differ in their potential role in contributing to the development of social capital; therefore, they need to be designed appropriately. Social capital development includes adopting an open-systems organic mindset, leveraging relational aspects of leadership development, building networks and story-telling skills (McCallum & O'Connell, 2009). In this paper, we adopted Day's (2001) broad definition of leadership development (human and social capital development), as sustainable leadership builds upon interpersonal trust (Riggio & Lee, 2007) and transparency to reduce the complexity of relationships and decision-making processes.

The paper is based on four assumptions (McCauley et al., 2010). First, people (internal and external stakeholders of an organization) participate in leadership roles to fulfill responsibilities to larger social entities. Second, instead of the classification of leader-follower, our thinking is based on the premise that people develop in different ways, which

makes us successful in a variety of leadership roles we assume (followers are empowered and considered valuable stakeholders). Third, leadership development (Conger & Fishel, 2007) is bound to the context. Fourth, leadership skills can be developed and are socially desirable.

2 METHODOLOGY

Case study (Frankfort-Nachmias & Nachmias, 2008; Gorard & Taylor, 2004; Thomas, 2011) is based on active and competent conceptualization, application, analysis, synthesis, and evaluation of information, knowledge, and insights gained through various forms of communication, observation, personal experience, reflection, and reasoning. As a main research method, case study (Yin, 2009) was implemented because of the purpose of this paper and the current stage of discussed concept development. Patton (in Boeije, 2010) argued that qualitative findings are strongly related to context, and case study aims to understand and expose important social dimensions, unlike generalizing from a sample to the population. The paper combines theoretical and empirical work (Matthews & Ross, 2010). Because of the need for in-depth longitudinal understanding (Gummesson, 1991) and the lack of existing comprehensive knowledge about sustainable leadership development (Hickman, 2010) we used qualitative research[2].

We used engaged management and organization research approach (Greig et al., 2013). Selection of case study was based on theoretical and pragmatic reasons. Theoretical justification, together with demonstrated sustainable efforts, were key reasons for selecting Si.mobil as the case study. Selection was also based on practical reasons of access and collaboration with lower, middle, and upper management in the company, as it is crucial for qualitative research to have good cooperation from participants. Case study included 15 in-depth interviews with organizational leaders at all three hierarchical management levels: two focus groups within the organization with organizational trainers and Eco team members, two focus groups with organizational stakeholders; three expert validation interviews, and three scholar validation interviews.

Data were collected and analysed using qualitative methods performed with Si.mobil's key informants (Boeije, 2010; McAlearney, 2006) through a snowball sample. The sample was expanded so informants in the role of storytellers were asked to suggest experts for further qualitative interviews. Gathered data was then triangulated using various qualitative methods, including observation, document analysis, and expert and scholar validation.

A multi-method research approach was used to ensure validity and reliability (Peräkylä, 1997) of qualitative research and to conduct triangulation. Data gathered from the qualitative interviews and focus groups were validated with naturally occurring data obtained through narrative analysis and observation. Two focus groups with employees were conducted to answer the research question. One focus group was conducted with

2 Period of data collection is 2011-2015.

internal trainers and one with members of Ecoteam. Key informants were managers interviewed and employees in focus groups. All qualitative interviews were transcribed. Data analysis was conducted by identifying the main topics in the transcriptions of the interviews and focus groups using NVivo software. We conducted three rounds of interviews with all three levels of management at Si.mobil. The first in-depth interviews were the longest, lasting from approximately 90 minutes, depending on the length of respondants' answers. The second and the third rounds of interviews were intended to fill in information we noticed was lacking from the analysis of the previous findings. We also complemented interviews with other research techniques to provide for the validity of the findings. Triangulation was carried out using different methods and asking respondents with different pespectives on the investigated matter of sustainable leadership development. We did not try to validate findings in a positivistic sense but present empirical data in order to enable a better understanding of researched phenomena (Johnson & Duberley, 2000). Gathered data and the research conclusions are tentative and open for further interpretations as the field progresses (Zhang, Macpherson & Jones, 2006).

3 RESEARCH FINDINGS

> *»Development of leadership skills was through the years conducted continuously at many different levels and the content was adjusted to the needs of the trainees as well as activities of the wider Si.mobil engagement. From group management skills we moved to individual business coaching with internal and external coaches. We also regularly take part in TAG Business School in Wiena. We test how employees feel inside their teams that are lead by our developed leaders. As our TAGisfaction reports are available for each individual leader they represent guidelines for leaders what needs to be implemented or improved in practice of leading.«*
>
> *Si.mobil Employee 1: 2015*

Research findings from primary and secondary sources present the developmental targets and the evolution of sustainable leadership development at Si.mobil by listing main activities that had the biggest developmental impact. The purpose of this study was to investigate implications of integrating sustainability for leadership development. Therefore, we needed to identify activities that provided the developmental environment for sustainable leadership development. The Re.think initiative is recognized as the internal and external driver of sustainable leadership development of Si.mobil's stakeholders.

Si.mobil, the second largest mobile operator and service provider in Slovenia, has gained the reputation as a socially and environmentally responsibile company because of its sustainable behavior in the wider business and educational environment, which has also gained them many rewards in the professional community[3]. A case study of the

3 The appropriateness of Si.mobil as a representative entity for sustainable leadership development was identified in the most high-profile representational awards, including Slovene Best Employer Award Recipient; recipient of the Award of Excellence, awarded by the Si.mobil's maternal headquarters, Telekom Austria Group (TAG); Best Corporate Social Responsibility Initiative at the Level of the Entire TAG; recipient of awards in the

development of sustainable leadership at Si.mobil was chosen because of the universal interconnectedness of sustainable leadership developmental activities with the company's mission, which aims to increase its contribution to the well-being of the Earth and educate its stakeholders by developing an educational platform in cooperation with kindergartens, schools, and the Faculty of Economics at the University of Ljubljana. In the Slovene business community, Si.mobil and Re.think are references when researching and implementing environmentally socially responsible businesses. This study focused on the process that runs from a sustainability mission toward implementing a leadership development program in accordance with the main identified value—sustainability found to be appropriately disspearsed into complementary values at the individual level. The activities of sustainable leadership development stem from the company's mission and were systematically strengthened in 2008.

3.1 Framing the beginnings of sustainable leadership in Si.mobil

> *"Ecological initiative and Re.think philosophy have evolved together. 2005, 2006. Later Re.think overgrew only ecological initiative and became a framework for all the sustainable effort we share now. Ecological part is more focused on what we do with ISO standard. Re.think is everything we do in the ecological and sustainable field."*
>
> *Si.mobil Focus group: 2012*

The year 2008 is acknowledged as the formal beginning of a long-term environmental impact by merging environmental activities under the initiative Re.think, created by Ecoteam, the first inventory of energy efficiency, established by the Si.voda Fund and the first room for victims of violance in Ljubljana, which was established with the funds from donations at the Party with a Cause.

In 2009, the public recognized the good practices of Si.mobil and awarded the chairman of the Si.mobil management board the title Manager of the Year in Slovenia. Si.mobil employees received the Most Innovative Staff Practice award for the Re.think project. Si.mobil opened its first environmentally-friendly store in Maribor and presented its Re.think project to the outside public.

In 2010, the first project of the Si.voda Fund (biological water treatment plant in Modraže) was implemented. Si.mobil started also with eco-electronic reports each year in an innovative ecological style that informed stakeholders about their engagement. Si.mobil started its orientation of business toward paperless communications and symplicity of

competition for Environmentally Friendly Company; founder and main financial source of Si.voda Fund, which is responsible for clean and healthy water; and recipient of an integrated Family Friendly Company Certificate. In 2009, Si.mobil obtained environmental certification ISO 14001 standards. Si.mobil received the award of Best HRM Project for Si.mobil's concept of innovation in October 2012. In October 2013 the company received the award of Slovene newspaper Finance for ecological transportation fleet. In 2013, the company successfully passed an external audit ISO 14001, and arrangements were made for entry into the EMAS.

administration procedures. The Telekom Austria Group awarded Si.mobil an Award of Excellence for Best Corporate Social Responsibility Initiative for a Re.think philosophy at the level of the business group TAG.

In 2011, Si.mobil obtained a permanent certificate as a Family-Friendly Company and received the Golden Thread award for the second time in a row for being the best employer in the category of big companies at the national level. The company also established an energy-efficient operational mobile network, organized the 10th Party with a Cause, took part in cleaning campaigns in collaboration with the Society of Ecologists without Borders, participated in the nation-wide campaign, Clean Slovenia, in one day and a nation-wide campaign, Used Paper for New Hope (recycling office paper).

In 2012, Si.mobil was active in age management with mobile and internet workshops for seniors. Energy-efficient renovation of the headquarters also began. The SIMPL Kidz mobile packet (sustainable education of mobile usage for children) was conducted to encourage responsible consumerism (book for children about the endangered European otter Luther and sustainability). The company also hosted a contest for recycling phones in a creative way and rewarded the opening of e-invoices. Si.mobil also implemented the first open call Youth for Youth fundraising at the Party with a Cause.

3.2 Further advancement of sustainable leadership around Si.mobil

> *"Usually these kinds of socially responsible activities are carried out systematically. Somebody prescribes what needs to be done and then he/she transfers it to all the rest in order for them to think in that way. Then rules are made and control checks if the work was done, accordingly. At Si.mobil we do not function in this way. We started to think in this way on our own. We did not have internal rules which would tell us how to think."*
>
> *Si.mobil Focus group: 2012*

The implications of integrating sustainability for leadership development are demonstrated in the way how social skills are being developed. The focus is on leadership development having a positive effect on the community. Si.mobil was awarded a title »The most friendly company towards volunteering« in 2013. Slovene philanthropy rewarded Si.mobil for socially responsible actions in 2012, among others, Clean Slovenia action 2012, Simbioza computer lessons for elderly, blood donation, socially responsible teambuildings, donations and an employee system where every employee at Si.mobil can spend 2 working days volunteering in a chosen organization.

In 2013, Si.mobil upgraded ISO 14001 with measures that met the standards to enter into the EMAS system (EU Eco-Management and Audit Scheme). Financial donations from the 12th Party with a Cause were given to Project for Youth House SRCe. Institute Nefiks (with the financial support of the Si.mobil) proceeded with the project »Job is not looking for me« where youth employment clubs strengthened youth employability. The

company celebrated its 3rd anniversary of obtaining a full Family-Friendly Certificate, among other activities, it introduced a new measure to provide free clinical breast and gynecological examination for women and urological ultrasound and laboratory analysis of hormone prostate PSA for men. They updated the 3G network in Slovenia to provide a more powerful and responsive network. Existing equipment was replaced with novel equipment, which was not only more energy efficient, but also ready for subsequent upgrades to LTE technology. The new technological infrastructure is efficient and more environmentally friendly. The Si.voda Fund has supported: (1) the formation of drinking fountains in Ljubljana kindergarten Mojca; (2) an initiative of the Institute for Water of the Republic of Slovenia for entering a carniolan wall (traditional technique of regulating streams) in the register of Cultural Heritage at the Ministry of Culture in accordance with the UNESCO Convention for the Safeguarding of Intangible Cultural Heritage; and (3) a biological water treatment plant for the branch school in Lučina. Because many elderly face obstacles in using their mobile phones, Si.mobile offers for all seniors free workshops where they can learn the basics of using mobile phones (Simbioza project and Senior Hours). Together with the Faculty for Security Science, University of Maribor, the Centre for Mediation in Network Incidents SI-CERT, the project coordinator of »Safe on the Internet«, the Ypsilon Institute and its project Simbioza of the intergenerational cooperation, Si.mobile prepared a brochure with advice and information regarding safe use of mobile phones. In collaboration with the pharmaceutical company Sanofi, Si.mobil also developed a mobile application for smartphones and tablets »I know what I eat!« The application is free and intended primarily for diabetics; however, it could be used by all who want to monitor their food intake and physical activity. Si.mobil was the winner of the tender ECO fleet in 2013 (by the average emission of carbon dioxide per kilometer - Eco transportation fleet) in the category of companies with a large fleet of over 35 vehicles: »Average carbon dioxide emissions of Si.mobil fleet, which consists of 62 cars is 132 grams per kilometer. To this outcome 20 Opel Astras with 119 grams of emissions are major contributors, while a few luxury cars (BMW 525d xDrive, Volvo S60 and V60) have economical engines with emissions below 150 grams.« (Milač, 2013, p. 14).

In April 2014, the company was registered in the EMAS directory and celebrated Earth day with activity Old paper for new hope by joining with Ecologists without Borders and collecting old paper. In May 2014, Si.mobil was rewarded for socially responsible practices of the Party with a Cause. In October 2014, they received »Certificate resources SAVED 2013« from the Interseroh ALBA Group in Germany. In 2013, Si.mobil gave 36.317 kg of waste (used electrical and electronical equipment) to the Interseroh ALBA Group.

Our findings of the Re.think evolution at Si.mobil, in collaboration with key stakeholders, indicate the need to move away from leadership studies that have explored heroic leaders over the last hundred years. This conceptual leap is presented in the Re.think initiative, which represents the internal and external sustainable leadership development environment and is based on bottom-up and top-bottom developmental approaches. This means that it builds its leadership potential and sustainability on the leadership development model for youth, employees, and key stakeholders from business, social, cultural, and natural environments. Top-bottom developmental approach is represented in an expressed

support of top management for sustainable leadership development and bottom-up developmental engagement is provided in the number of applications and participants in leadership development tools. Therefore, it does not only focus on developing internal top management leading potentials as in traditional leadership development models (Fulmer, 1997). The new model of sustainable leadership is a result of collective efforts. The case study indicates that sustainable leadership development (conducted in a wider community by satisfying the needs of stakeholders) results in (1) improved management of organizational challenges, (2) employee and customer commitment, (3) social integration, and (4) creative environmental protection.

Proof quotes (Pratt in Langley, 2012) were sought at Si.mobil stakeholders for each of the four dimensions to highlight and support the identified codes empirically.

3.3 Improved management of organizational challenges

> *»It is very hard to be a mobile only provider. Telecommunication companies have consolidated and all successful companies offer all services, therefore we are also starting to offer mobile service together with landline telephone services, TV and internet services. Educating people for safe internet usage is something close to us and connected to our core business. We sell it and the logic is that if we teach an elderly person to use internet without worries and safely both will benefit – the company will have relatively fast financial impact and the person will learn something useful – that is why we will keep investing in this.«*
>
> *Si.mobil employee 2: 2015*

The Re.think initiative brought together Si.mobil's in-company and market activities (Si.mobil annual report 2012) by strengthening the connection of generations through advanced technology and services they develop and provide. By strengthening their corporate culture around the mission of sustainability, their image on the outside became clearer and attracted similar-minded business partners and clients. A new segment of business—cloud technology—together with other innovative business practices, such as simplicity, provided the company with a competitive advantage. M2M (Machine to Machine) program developed by Si.mobil was awarded by multinational group TAG for an ecosystem that connects producers of appliances, mobile operators, platform suppliers and developers in order to collect data, analysis and automatization (Pollak, 2013-2014, p. 7). Special segments for elderly and children have enabled the company to develop, adjust, and connect services to sustainable marketing and spread the Re.think philosophy through their clients.

Guidelines for raising the quality of the work process in Si.mobil are manifested through the following activities that have incorporated sustainability: (1) working booths with acoustic armchairs allow phone conversations with greater privacy; (2) quiet rooms are suitable for work when the employee needs full concentration and peace; (3) ergonomic work chairs are fully customizable to every individual; and (4) since November 2013, the

delivery of products from local farms has been available, as Si.mobil joined the program »Home-grown«, which supplies employees with local food products.

The initiative of Re.think has grown into an environmental philosophy with educational and innovative components. Specifically, Foundation Si.water was founded and collaboration with the Faculty of Economics at University of Ljubljana was established, to raise awareness and carry out creative environmental projects.

3.4 Employees and customers commitment

> *»The biggest shift in leadership development happens when you start trusting people, their expertize and you set yourself as a role model of good leader that coordinates, gives »a big picture« perspective and expects results from his/her coworkers.«*
>
> *Si.mobil employee 3: 2012*

Si.mobil is present in the business community by communitating a commitment toward its employees and customers through education and development. The Family Friendly Company Certificate is one of the programs they follow internally to help employees balance private and professional responsibilites. The services and products provide a good user experience; however, they are also intended to provide a means to grow professionally and personally. As a beginning to expanding one's horizons in an environmentally friendly way, Si.mobil identified employees satisfaction as an important part of its organizational performance. To sustain satisfaction of its human resources, the company implements a variety of educational and well-being programs that instill the value of respecting human existance.

The year 2013 was a turning point in the definition and scope of social responsibility of Si.mobil, as they newly identified main directions to deepen contact with business users and the wider environment (not only employees and the local community). Among the activities were strengthened: (1) the provision of security (internally to employees and externally to user network security); and (2) efficient management of resources (e.g., quiet rooms, energy-efficient renovation of headquarters, where all biodegradable materials and old equipment were donated to start-up businesses or offered for employees to purchase. Si.voda Fund has earned a reputation, especially in professional circles. Its recognisability and recognition which is tracked through the number of proactive applications to its call for funding is growing. The interest of the media is also clearly evident through media coverage of Si.voda fund's activities.

3.5 Social integration

> *"We are the firm that will bring broadband internet all around Slovenia. This is something that is priceless in a sense of our responsibility toward the wider social environment."*
>
> *Si.mobil employee 2:2015*

The time when companies demonstrated their social responsibility through only sponsorship and donations seems to be over. Si.mobil is led by sustainable leaders who actively seek innovative approaches of collaboration with stakeholders from their local environments that stimulate employees in achieving business goals. Re.think philosophy builds connectivity, which means that it enables its customers to connect to their loved ones and have all relevant information available to them through innovative technology. Programs »Internet for all« and »Happy Hours« are educating elderly and other excluded populations in safe internet usage. Si.mobil takes care of young people realizing their ideas (projects, such as youth employment, by raising social responsibility of young people through employment project of Institute Nefiks). Si.mobil undertook a special coverage obligation which means that it undertook the responsibility to cover 95% of Slovenia with internet and cover at least 225 white spots in Slovenia, i.e. areas completely lacking a broadband network, by 2017. Sustainable marketing activities are focused on e-business and ecologically made materials in customer relations. Part of sustainable marketing also aims to improve quality of life (e.g., educate parents and children about the appropriate use of mobile phone for children). SIMPL Kidz is a product that has several safety mechanisms in order to make mobile usage safe for children, such as the possibility to call their parents even with an empty account.

Sustainable leadership development efforts stemming from the Re.think philosophy have two main strategical priority fields: employee and environment care through a process of initiating, developing, nurturing, and communicating the initiative, as well as by rewarding responsible individual actions, which are a cause for wide public interest in Si.mobil's sustainable leadership development. It is evident that, through reflection with stakeholders, observation, identification, and demonstration of social environment values, the Re.think initiative performs the role of upgrading the educational dimension of its operations in the local community. Sustainable leadership development incorporates structured experience-based learning, mentoring, coaching, integration into local community, teambuilding with prosocial behavioral components, and feedback component of all activities within the Re.think initiative.

3.6 Creative environmental protection

> *"We have many things to demonstrate and I believe that even from small Si.mobil a lot of things can be learned. TAG took over many things, that we did, they renamed them, popularized them but Re.think and "Internet for all" program is something that TAG learned from us. In corporate social responsibility field we were definitely benchmark for them."*
> *"Establishing connections between generations is enabled through technology. Also, being an active employer of young people, that is certainly important. We have a very young workforce and continue to nurture collaboration with the university, especially natural science professions. Students have the possibility to visit us and see how we function inside the company. We need them and they like to interact with our employees who keep contact with professors at the university, this relationship is good."*
>
> *Si.mobil employee 2: 2015*

"The first thing we made for our employees was a cup for pencils that was made out of our recycled office materials. We go into details of our Re.think ideas."

Si.mobil Focus group: 2012

We found the strong impact that the Re.think initiative (structurally founded in 2008 and grew into Re.think philosophy) has on bringing together environmental commitments of »recycle-reuse-reduce-rethink« with establishing social connections between generations. Connection of younger generation with the elderly generation is carried out through technology, active employment policy, contests in collaboration with the Employment office of Slovenia, developing youth entrepreneurial skills and educating the elderly in safe internet usage by corporate volunteering. In the area of social and environmental responsibility, Si.mobil's activities are guided by effective resource management, including (1) the development of youth and their social responsibility; Party with a Cause 2013 donated the collected funds to project SRCe House—house solutions for young people, and (2) renovation of headquarters; selected LED lighting in the renovated office building uses less electricity than conventional bulbs, selected floor does not release harmful fumes into the air, acoustic ceiling panels reduce echo in the room and provide cost savings for lighting, use of two-stage buttons for flushing toilets, sensor buttons for flushing urinals, and sensor taps and basins reduce water consumption.

Orientation toward the realization of ideas includes the following activities: (1) creative corners of open spaces were designed during the headquarter renovation to encourage thinking, creativity, open innovation, and speed of meetings and discussions with colleagues from different departments to strengthen coordination; (2) on the walls of workspaces, offices, creative corners, meeting rooms have »write – erase« walls to serve in brainstorming; and (3) SENIOR Hours: Si.mobil participates in project Simbioza and organizes workshops for the elderly where retired people learn how to use mobile devices (phones and internet).

Leadership development is based on theories that determine what makes a leader effective and what type of leadership an organization wishes to develop. At Si.mobil, responsible decision making for sustainable development of leaders is highlighted. In 2014, employees expanded sustainable leadership development by registering into the EMAS system, constructing a new biological cleaning plant in the educational environment, performing Senior hours, and organizing Party with a Cause that educates the younger generation about social and environmental issues through socializing. In the present case study, based on company's mission, the sustainable approach is clearly indicated. Sustainable leadership development in Si.mobil is gathered under the framework of the Re.think initiative, which has grown into the philosophy of the entire international business group TAG and pervades all interactions with stakeholders. Traditionally, leadership research has focused on individuals in positions of power, such as CEOs, and leadership has been perceived as an individual attribute (Kezar & Lester, 2011), while sustainable leadership development is based on sharing and expanding leadership responsibilities. Si.mind is the program that encourages all employees to think about everyday work activities and

contibutes to resource savings. Employees are encouraged and rewarded for internal entrepreneurial ideas and provided help for the realization of ideas.

The integration of sustainability into the company's mission influences the spill over process of framework value—sustainability into person-owned values identified and stengthened in (1) personalized leader development and (2) collective leadership development efforts specific to the Re.think philosophy. Si.mobil implements sustainability into its mission as a result of employee's dedication to creatively protecting the environment. However, over time, the initial enthusiasm of the first members of the Eco team fadded away and the human resource management department identified the need to revitalize sustainable leadership development in a systematic manner. Our field study identified several factors that effect sustainable leadership development: (1) value-based motive for leading; not only does the sustainable leadership program at Si.mobil wish to develop leadership skills, but it also wishes to instill direction toward which these skills are needed to lead and this direction stems from clearly stated system competencies indicated in the mission of sustainability; (2) support of wider environment that encourages and accepts activities with wider social and ecological impact; (3) regular identification and coding of dispersed activities that are overall a part of sustainable leadership development; and (4) share gained knowledge, experiences and social network with interested stakeholders to further develop sustainable leadership.

4 DISCUSSION AND CONCLUSION

> *»We actually never conducted trainings of managerial skills without custom-made education adjusted to our needs and challenges in the company Si.mobil. We always emhasized learning for real situations, real challenges in order to equip and empower leaders for searching new knowledge, new approaches, new insights and consequently new behaviours, new successes of transfering trainings into practice. One of our values is »role modelling« which is very important for knowledge and behaviour transfer. Through 360-degree feedback about leadership standards we clearly provide a mirror to our leaders.«*
>
> *Si.mobil employee 1: 2015*

With the aim of understanding the process that starts by stating the sustainability mission and implementing it through leadership tools, we focused our qualitative research endeavour on a case study of Si.mobil's evolution of the Re.think initiative into a philosophy. Companies often have no difficulty putting a propeling mission on their webpages and into strategical documents; however, rarely are the approaches of implementing it so clear and »alive« as in the case of Si.mobil. Our research identified the results of that kind of mission and how it is sustained through leadership development tools. Stating a sustainability mission is a static act if it is not supported with continuous sustainable leadership development. Based on qualitative research findings from primary and secondary data we identified sustainable leadership development as the main construct in analysing the process of dispersing the sustainability mission to all Si.mobil stakeholders.

The incorporation of sustainability contributes to collective leadership development through the integration of different stakeholders and empowering them by providing them space for initiatives through different contests, programs and services. Sustainability mission is too complex and demanding a goal to be achieved by only one entity, therefore we claim that it is the network of stakeholders and the ability to connect their interests around the long-term value system that enables sustainable leadership development. That kind of leadership approach is sustained by appropriate leadership tools, according to the needs of the stakeholders.

Implications of integrating the sustainability mission into a leadership development program are demonstrated in refocusing the content and structure of leadership development planning, organizing, leading, and controlling at Si.mobil. The mission of sustainability influences the systematic and organized activities within and around Si.mobil. Empowering people with broadband internet networks is an operationalization of the mission that company Si.mobil connected with diverse Re.think initiative activities which all share dedication to empowerment of its stakeholders.

We propose that sustainable leadership development is based on symbiotic capital. Symbiotic capital is the advancement of human and social capital together with natural capital. Thus, symbiotic capital aims for the symbiosis of complementary human, social and natural systems. A new form of capital was evident in the data gathered inside of the company Si.mobil as employees are thinking about the symbiosis of their activities with the needs and well-being of wider stakeholders.

Sustainable leadership development is demonstrated through the imagination of a vision, building a strong mission, and the performance and use of the knowledge and skills the company possesses, collectively. Sustainable leadership development has been studied from the perspective of key participants and how they attribute meaning to their everyday experiences in which the phenomena is reflected. Implementation of leadership develoment tools, especially with respect to influencing future generations of leaders is specifically demonstrated in the Employee engagement 2.0 program that was awarded the 3rd place at the National HRM project contest in 2013. Si.mobil includes coworkers in different strategic initiatives that seek new business opportunities. The findings of the empirical work show that the implementation of the company's mission is most effective in sustainable leadership development where individuals are actively involved in realizing the mission and participate in creating goals where they can shape sensemaking of their development, rather than simply acquiring knowledge and skills without being involved in the entire developmental process.

Because of a worsening social situation of Slovenians, employees at Si.mobil felt the need to shift their Re.think efforts from ecological activities to social issues and help their surroundings; therefore, they focused on ecological and social aspects of their business. Leaders who participated in the case study label themselves as different from their competitors in the telecommunication industry. Additionally, the triangulation methods ensured that stakeholders working with Si.mobil really do see it as a »hippy commune«,

fresh collective, and creative organization that introduces innovations into the market. Hippy commune represents a metaphor (Morgan, 2006) that informants expressed many times when talking about the intangible aspects of Si.mobil. Meaning, they do things in their own way and always in collaboration with the local community and natural environment. A representative employee at Si.mobil is not posh but natural, easy going, a party lover, and enjoys work and fun, all together. Unique for Si.mobil are teambuilding activities that incorporate the mission of sustainability: »Si.mobil employees like to take part in teambuilding as they offer us the chance to do something good for those who need our help and good will« (Dragišič, 2015, p. 33). Si.mobil teambuildings are a way of corporate volunteering where employees grow personally and develop social and communication skills. If sustainability mission would not be incorporated in leadership development tools, then also teambuidlings would only be focused on socializing and having fun instead of doing both of those things and also helping people in need.

Day et al. (2014) emphasized that, despite a long research history of leadership theory, the systematic study of leadership development has a moderately short history and a need exists for scholars to show direction for leadership development research. Implications of this paper for theory are in establishing and directing research of sustainable leadership development with a clear motive of nurturing environmental and social responsibility among leaders and their stakeholders. This paper establishes that practices of employee well-being and creative environmental protection enable systematic sustainable leadership development. What is interesting is that one first acts and later becomes a role model for others, which creates a cycle of sustainable leadership development with stakeholders (as demonstrated by spreading the Re.think philosophy to the multinational group TAG).

Codes in the NVivo qualitative research analysis program were identified as outcomes in the analysed research data and included: (1) improved management of organizational challenges, (2) employee and customer commitment, (3) social integration, and (4) creative environmental protection. The sustainable leadership development process starts with stating the sustainability mission and implementing it through leadership tools. At Si.mobil, the research into Re.think demonstrated that the process has been simultaneously running in both directions, bottom-up and top-bottom. The mission is dedicated to »What we want to achieve and develop in our company?« the leadership tools are focused on »How will we develop and achieve our mission/strategical goals?« The later question was answered in presenting the evolution of how sustainable leadership was developed over the decade examined at Si.mobil. Si.mobil is recognized for its sustainable leadership as it has acted continously over the last decade in all three elements of sustainable leadership development: building community, fostering collaboration among stakeholders, and promoting long-term value (Avery & Bergsteiner, 2011b) through presented activities.

Sustainability mission influences the implementation of leadership development tools by incorporating long-term value into them and enabling the sharing of leadership responsibility. Sustainable leadership development is an ongoing process, not limited to an event or curriculum, where action that creates well-being for a wider environment is the

purpose of leadership development tools. Also, sustainability mission influences future generations through different initiatives that take place outside the corporate facility and university campus. Employment clubs for youth that function due to Si.mobil support from 2012 onwards in collaboration with Nefiks institution increase employability skills of future generations. Si.mobil leaders take the responsibility for empowering future generations, such as providing lectures and practice on how to find a job, network, present oneself, conduct a job interview. Si.mobil leaders also promote the value of entrepreneurship – outside and inside the company through different contests (eg., elevator pitch contest, internal entrepreneurship contest). Incubator program Start:Cloud for young start-ups in the field of business solutions in the cloud is organized in collaboration with different business partners in order to enable young entrepreneurs access to the market and enable the presentation of their products to the market (Škufca Zaveršek in Ažman, 2013-2014, p. 44). Implementation of leadership development tools is impacted by sustainability mission also in the activities dedicated to the outside stakeholders, such as children who use Si.mobil products and are born into the society that is technologically advanced – »internet natives« which means that Si.mobil is also dedicated to educating children how to safely use their applicances and services.

The implications of this research for practice are in fostering critical thinking about reasons for and effectiveness of environmental and social initiatives of organizations. The findings present the dimensions for effective sustainability of such initiatives and enable insight into how these initiatives can be started and managed over time. The paper strengthens the importance of coordination between activities of different departments within an organization to yield beneficial effects that stem from a mission focused on practicing sustainable leadership development agenda. The Re.think initiative is an exemplary case of the importance of balancing linkages among internal (employee-centered) and external (environmental and socially-centered) strategical efforts and actions. Our findings confirm the literature (Avery & Bergsteiner, 2011a) that collective leadership development efforts strengthen the execution of a sustainability mission. Sustainable leaders operate based on competence (functional expertise), integrity (honesty and openness), and taking care of »compliance of interests« (among individuals, organizations, society, and the environment). Sustainable leadership development in Si.mobil is based on: (1) a set of internally identified competencies stemming from the company's mission; (2) wide support of developmental techniques (coaching, business academy Si.mobil, mentoring, experiential learning and internal rotation), and (3) engagement in meeting the needs of the wider environment and future generations.

Limitations of this study are connected to the qualitative research method of examining only one Slovene company. We think it would be interesting and valuable to conduct a comparative international study of sustainable leadership development. In the future, a comparative study is recommended in collaboration with the specialized professional group of sustainable leadership researchers at the Institute for Sustainable Leadership, based on the paper findings written about sustainable leadership practices at BMW (Avery & Bergsteiner, 2011b). Also, a quantitative methodology is recommended to gain complementary data of the phenomena of sustainable leadership. As sustainable

leadership development is specific with respect to time, a longitudinal research endeavour over the next 20 or more years would be interesting.

When we talk about such a wide and overall present term, such as sustainability, it is even more neccessary to be specific in designing and applying it into business reality. Goal alignment needs to ensure that every employee is aware of the company's values. Presentation of the incorporation of the sustainability into leadership development provides a theoretical basis for designing practical developmental programs for other interested companies. Recommendations for further research are in line with contemporary leadership development needs (Reichard & Paik, 2011) and include: (1) a systematic survey of early leadership development of identified potentials as a regular part of leadership development programs; (2) integration of theory and practice of comprehensive lifelong leadership development into sustainable leadership development; (3) a new conceptual framework of leadership development based on explicit (scholarly works) and implicit (ideals, metaphors and representations of leaders) leadership theories; (4) inclusion of the dimensions of diversity (age, gender, culture, interests, knowledge, and skills) in understanding and implementing leadership development; (5) examining mentoring as a key area of sustainable leadership development; and (6) examining the role-modelling function in sustainable leadership development process.

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METACOGONITIVE AND MOTIVATIONAL CULTURAL INTELLIGENCE: SUPERPOWERS FOR CREATIVITY IN A CULTURALLY DIVERSE ENVIRONMENT

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ABSTRACT: *We propose that employees who are highly motivated for cultural interactions (motivational cultural intelligence) and can modify their thinking about cultural differences (metacognitive cultural intelligence) are more likely to be creative in culturally diverse environments. Based on the social categorization theory, we propose that metacognitive and motivational cultural intelligence will be positively related to individual creativity. Moreover, we predict that metacognitive and motivational cultural intelligence can decrease the negative aspects of the social categorization process and, in turn, be positively related to creativity. A quantitative analysis of 787 employees in 20 SME multicultural companies in the Adriatic region shows that metacognitive and motivational cultural intelligence are in fact positively related to individual creativity. We discuss the implications for practice and future research.*

Keywords: *Creativity, metacognitive cultural intelligence, motivational cultural intelligence, cultural diversity*
JEL Classification: M14, 030
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INTRODUCTION

Creativity, defined as the production of ideas that are both novel and useful (Amabile, 1996), is the first step towards innovation (Amabile, Conti, Coon, Lazenby, & Herron, 1996) and a cornerstone of organizational change (Gilson, Mathieu, Shalley, & Ruddy, 2005; Zhou & Hoever, 2014). Therefore, it is not surprising that scholars and practitioners have shown a strong interest in identifying factors that could enhance employees' creativity (Shalley & Gilson, 2004; Zhou & Shalley, 2011). In the past, scholars have mostly examined the antecedents or specific subsets of antecedents, such as personal and contextual factors that facilitate or inhibit creativity (Shalley & Gilson, 2004; Shalley, Zhou, & Oldham, 2004; Zhou & Hoever, 2014). However, little research has been conducted to explore the influence of a culturally diverse environment on creativity.

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A culturally diverse environment is an everyday fact in the workplace (Homan et al., 2008) as organizations are increasingly operating internationally (MacNab & Worthley, 2011). Moreover, the workforce is becoming more diverse due to globalization (Shin, Kim, Lee, & Bian, 2012). However, the empirical evidence of linking diversity and creativity has yielded mixed results about whether a culturally diverse environment enhances creativity (Anderson, Potočnik, & Zhou, 2014). Based on the value in perspective, diversity literature proposes that a diverse work environment extends the ranges of different problem-solving styles, knowledge, perspectives, and skills (Pelled, Eisenhardt, & Xin, 1999; Williams & O'Reilly, 1998), which in turn stimulate individuals and lead them to create new ideas (Cox & Blake, 1991). Therefore, cultural diversity may be a valuable source for employees' creativity (Amabile, 1996). On the other hand, the similarity attraction argument (Pfeffer, 1983) suggests that cultural diversity may indirectly decrease employees' creativity due to a social categorization process. Evidence indicates that the social categorization process (Tajfel & Turner, 1986), in which individuals start to categorize colleagues as in-group/out-group members based on cultural differences, hinders the use of the available information (Van Knippenberg, De Dreu, & Homan, 2004). Moreover, the possibility of emotional and relational conflicts in a culturally diverse group is much higher (Northcraft & Neale, 1999; Mannix & Neale, 2005). Cultural diversity may therefore relate negatively to individual creativity. Considering all of the above, broader concepts of the factors and conditions that allow people from different cultures to collaborate creatively are needed (De Dreu, & Nijstad, 2004; Leung, Maddux, Galinsky, & Chiu, 2008).

Our objective is to explain and resolve the inconsistent relationship between a culturally diverse environment and creativity. In order to do so, we propose that metacognitive and motivational cultural intelligence can provide a more in-depth insight on how to minimize the negative influences of social categorization processes due to the cultural diversity in order to stimulate individual creativity. Metacognitive and motivational cultural intelligence are an individual's capability that helps him or her to function effectively in a culturally diverse environment and with people from culturally diverse environments (Ang & Van Dyne, 2008). Furthermore, metacognitive and motivational cultural intelligence increase the individual's understanding of similarities and differences (Earley & Ang, 2003) between culturally diverse colleagues from the East and the West.

On the other hand, motivational cultural intelligence increases the likelihood of interactions between culturally diverse individuals. Therefore, it is not surprising that a recent research indicated that metacognitive and motivational cultural intelligence are one of the most relevant predictors of effective performance outcome in a culturally diverse environment (Chua & Morris, 2009; Imai & Gelfand, 2010), and positively influence communication effectiveness in cross-cultural interactions (Bücker, Furrer, Poutsma, & Buyens, 2014). At this point, we would like to stress that metacognitive and motivational cultural intelligence can be part of cultural intelligence item or it can be research as single item, while as Ang et al. (2007) explains, different dimensions of cultural intelligence (metacognitive, cognitive, motivational, and behavioral) are different individual capabilities and, as such, may have different effects on the individual creative performance outcome. Thus, in this article we will research metacognitive and motivational cultural intelligence as individual

predictors of employees' creativity. Metacognitive and motivational dimensions of cultural intelligence can thus help to decrease social categorization processes in a culturally diverse environment. All things considered, we predict that metacognitive and motivational cultural intelligence are positively related to individual creativity in a culturally diverse environment.

We begin this paper by summarizing the existing literatures of creativity in a culturally diverse environment and then provide a theoretical background on how metacognitive and motivational cultural intelligence can help employees decrease social categorization processes in a culturally diverse environment, and in turn stimulate their creativity. To test our hypothesis, we carried out a field study in eight different countries as part of the PACINNO project (PACINNO, 2015). Firstly, we aim to contribute to the creativity research by extending the previous cross-cultural creativity research, while simultaneously considering individual capabilities (such as cultural intelligence) and contextual factors (such as a culturally diverse environment). Thus, we provide a significant contribution to the relationship between creativity and cultural diversity by answering repeated calls for greater research on creativity and cultural differences (Anderson, De Dreu, & Nijstad, 2004; Anderson et al., 2014; Shalley et al., 2004; Zhou & Su, 2010). Secondly, we further develop the cultural intelligence theory and answer a recent call by Van Dyne and colleagues (2012) by exploring whether individual creativity is actually an outcome of individual metacognitive and motivational cultural intelligence. In addition, we provide a more in-depth examination of cultural intelligence in regards to how different dimensions of cultural intelligence can stimulate individual creativity in a culturally diverse environment by decreasing social categorization processes. We conclude with a discussion of the practical implications, the limitations of our study, and suggestions for future research.

1 LITERATURE REVIEW AND RESEARCH QUESTIONS

1.1 Creativity in a culturally diverse environment

In line with Perry-Smith and Shalley (2003), we argue that a creative process is often a result of social interaction in which individuals are interacting, collaborating, and sharing ideas and solutions with others (Chua, Morris, & Mor, 2012; Perry-Smith, 2006; Unsworth, Wall, & Carter, 2005), while social exchange with different individuals may invoke new information and knowledge, which in turn stimulates individual creativity (Madjar, 2005). Therefore, the key to employees' creativity is with whom and how they interact. Recent research in creativity literature suggests that there are two relevant groups that may impact creativity: the first group includes leaders, teammates and coworkers at work (for a review see: Anderson, et al., 2014; Zhou & Hoever, 2014), whereas the second involves non-work-related people (Madjar, Oldham, & Pratt, 2002). At this point, we would like to emphasize that our study will be limited to the exploration of the influence of culturally diverse teammates on individual creativity only. More precisely, teammates and/or coworkers

may trigger individual creativity while they provide diverse input and knowledge, which enhances individual creative performance (Madjar, 2005; Perry-Smith, 2006).

Thus, diversity literature suggests that diverse coworkers can be a valuable source of employee creativity (Amabile, 1996), whereas the value-in-diversity argument suggests that individual exposure to the diverse knowledge, skills, and perspectives (Pelled, Eisenhardt, & Xin, 1999; Williams & O'Reilly, 1998) available from diverse colleagues enhances the generation of individual ideas (Perry-Smith & Shalley, 2003). There are many diversity-based individual or team attributes that can stimulate creativity, but the benefit of culturally diverse colleagues is usually unrecognized (O'Reilly, Williams, & Barsade, 1998). Therefore, our emphasis in this article is to provide the insight on how social interaction and exchange with culturally diverse colleagues can promote creativity. We define cultural diversity as the differences in visible characteristics, such as ethnicity, race and national culture (Chua, 2013; Cox, 1994). As Chua (2013, p. 1545) explains, a culturally diverse work environment "provides for the confluence of disparate ideas from different cultures; the appropriate combination of ideas and perspectives from different cultures potentiates creative solutions."

Although researchers (Chua, 2013; Chua, et al., 2012; Cox, Lobel, & McLeod, 1991; Giambatista & Bhappu, 2010; McLeod, Lobel, & Cox Jr, 1996; Stahl, Maznevski, Voigt, & Jonsen, 2010) have started to investigate the role of culturally diverse environments in the creativity process, we note that empirical studies have yielded mixed and often confusing results. Some studies have demonstrated that cultural diversity is positively related to creativity (Chatman, Polzer, Barsade, & Neale, 1998; Stahl et al., 2010), whereas others have found non-significant associations or negative influences of cultural diversity on creativity (Giambatista & Bhappu, 2010; Shin et al., 2012). In light of these conflicting findings in recent reviews of creativity literature, scholars have repeatedly called for further studies of the conditions under which cultural differences will stimulate creativity (Anderson et al., 2004; Anderson et al., 2014; Shalley et al., 2004; Zhou & Shalley, 2003). Our focus is to answer these calls by exploring how cultural diversity as a salient contingency can enhance individual creativity.

Drawing on social categorization theory (Tajfel & Turner, 1986), we argue that a culturally diverse environment can have a negative impact on individual creativity, but when properly managed, it can stimulate individual creativity. We go even further by proposing that metacognitive and motivational cultural intelligence can decrease the social categorization process and, in turn, enhance individual creativity. The social categorization process usually emerges when cultural diversity increases at the work environment (Richard, Barnett, Dwyer, & Chadwick, 2004) and employees start to compare themselves, based on similarities to and differences from their colleagues, to reduce uncertainty (Tajfel & Turner, 1986; Van Knippenberg et al., 2004). More precisely, working with culturally diverse teammates actually motivates employees to generate new subgroups in the work environment based on cultural dissimilarities among in-group members and dissimilar out-group members (Van Knippenberg & Schippers, 2007).

A recent research has indicated that the social categorization process in culturally diverse environments is negatively related to work performance (Pelled et al., 1999), group processes (Guillaume, Dawson, Woods, Sacramento, & West, 2013), and interactions among culturally diverse colleagues, such as sharing and elaborating creative ideas (Van Knippenberg et al., 2004), because employees are more likely to favor and interact with similar than dissimilar colleagues (Williams & O'Reilly, 1998). To summarize, the categorizing process of in- and out-groups may decrease individual creativity in a culturally diverse environment. However, we expect that metacognitive and motivational cultural intelligence can reduce these potentially negative consequences of the social categorization process and, in turn, trigger individual creativity among culturally diverse coworkers. Thus, we first define individual high cultural intelligence as a whole construct, and explain how metacognitive and motivational cultural intelligence dimensions can reduce the social categorization process among culturally diverse teammates in order to stimulate individual creativity.

1.2 Role of metacognitive and motivational cultural intelligence on creativity in a culturally diverse environment

Cultural intelligence is "operationalized as a specific form of intelligence" (Erez et al., 2013, p. 335) that indicates whether individuals can manage situations that are characterized by culturally diverse settings and involve individuals from a culturally diverse environment effectively (Earley & Ang, 2003). It includes four related but different dimensions: cognitive, metacognitive, motivational, and behavioral (Earley & Ang, 2003). Ang et al. (2007) explained that different dimensions of cultural intelligence represent different individual capabilities that together form overall cultural intelligence. Although theory and research on which dimension of cultural intelligence is the most critical for intercultural interactions is still developing, recent empirical evidence indicates that metacognitive and motivational cultural intelligence are the most valuable dimensions of creativity (Chua et al., 2012; Crotty & Brett, 2012; Earley & Ang, 2003). In this study, we are therefore going to limit ourselves only on metacognitive and motivational cultural intelligence dimensions.

The metacognitive dimension of cultural intelligence reflects individual mental consciousness and awareness during intercultural interactions. Ang et al. (2007) explained that metacognitive cultural intelligence relates to the way individuals plan their behavior before interacting with culturally diverse colleges, the way they monitor their assumptions during actual multicultural interactions and, then, the way they make mental adjustments if expectations differ from their experiences with multicultural interactions. Metacognitive skills can trigger employees' creative thinking (Feldhusen & Goh, 1995), so we predict that metacognitive culturally intelligent individuals are more likely to be creative, even in a culturally diverse environment. A study of 246 individual members of 37 multicultural teams indicated that creativity was actually higher when the team members were more metacognitive culturally intelligent (Crotty & Brett, 2012). In their study, Crotty and Brett (2012) also found that individuals with high metacognitive cultural intelligence are more likely to start to create a fusion culture in the work environment and blend diverse cultural

values into one culture. In line with this result, Adair et al. (2013) obtained similar results by demonstrating that metacognitive cultural intelligence indeed has a positive effect on shared values in culturally heterogeneous teams. If culturally diverse teammates have common values, they see themselves more as in-group members, which will, on one hand, increase the social interaction (e.g., sharing information and engaging in communication) and, on the other, decrease social categorization processes.

According to Rockstuhl and Ng (2008, p. 210), metacognitive cultural intelligence is based on individual conscious awareness of cultural differences during interactions, thus individuals with high metacognitive cultural intelligence "are less likely to make superficial and inaccurate judgments based on salient ethnic differences," which increases the social interaction between culturally diverse colleagues. As already mentioned, social interactions and communication with culturally diverse teammates are relevant to creativity as they can enhance individual creativity due to the receipt of new information (Amabile, 1996; Woodman, Sawyer, & Griffin, 1993). That is why we predicted that individuals with high culturally metacognitive intelligence would be more creative in a culturally diverse environment.

H1: *Metacognitive cultural intelligence is positively related to individual creativity.*

Motivational cultural intelligence as a third dimension reflects individual capability to direct energy and effort towards learning and functioning in cross-cultural situations (Earley & Ang, 2003). As Ang et al. (2007) explained, it is based on individuals' intrinsic motivation (Deci & Ryan, 1985) and self-confidence in their cross-cultural effectiveness in a diverse cultural setting (Bandura, 2002). Motivational cultural intelligence thus stimulates individuals to enjoy and have more confidence when interacting with culturally diverse coworkers, and to tend to persist when cross-cultural interactions are challenging (Bandura, 1997; Ng, Van Dyne, & Ang, 2009). Furthermore, individuals with high motivational intelligence may look for opportunities to interact with out-group members as they value the benefits of cross-cultural interactions, tend to be more engaged in intercultural interactions, and are thus more likely to overcome obstacles, setbacks, or failures due to cultural misunderstandings (Ang, Van Dyne, & Koh, 2006; Kim & Van Dyne, 2012; Rockstuhl & Ng, 2008; Van Dyne et al., 2012). According to Ng et al. (2012), the investment theory of intelligence (Cattell, 1971) would suggest that motivational cultural intelligence is a building block to stimulate metacognitive cultural intelligence.

Therefore, high motivational cultural intelligence can reduce the likelihood of emerging social categorization processes within a culturally diverse group (Rockstuhl & Ng, 2008), and in turn trigger creativity in a culturally diverse environment. We thus propose that motivational cultural intelligence can promote a non-routine creative task performance, which line with Earley and Ang (2003) is theorizing that employees with high motivational cultural intelligence should have a more superior task performance in a culturally diverse environment than individuals with low motivational cultural intelligence. Empirical studies have indicated that individuals' motivational cultural intelligence is related to the higher job performance (Chen, Lin, & Sawangpattanakul, 2011; Chen, Kirkman, Kim,

Farh, & Tangirala, 2010; Chen, Liu, & Portnoy, 2012), knowledge sharing (Chen & Lin, 2013) and beneficial agreements negotiations (Imai & Gelfand, 2010) in a culturally diverse environment. To sum up, we propose that individuals with high motivational cultural intelligence will interact more efficiently with out-group members, and the social categorization process will thus decrease, which will in turn trigger their creative performance.

H2: *Motivational cultural intelligence is positively related to individual creativity.*

2 METHODS

2.1 Sample and procedures

Empirical data was collected in October and November 2014 as part of the PACINNO project (PACINNO, 2015) from the Adriatic countries (i.e. Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, Serbia, and Slovenia) in order to get a culturally diverse sample. Our sample consisted of 787 employees nested within 73 groups from 20 diverse, innovative SMEs. A translation and back-translation procedure was used to translate the questionnaire from English to the languages of the analyzed countries and then back to English. We used a company-provided list of all employees in 20 different companies and invited employees to complete a survey either online or in hard copy during or outside their working hours. We provided confidentiality to employees that participated in the survey by identifying them with code names instead of their real names. Data was collected from the employees on the individual level and on the basis of the group/team work unit the employees are a part of.

Our sample consisted of employees from 20 different companies of diverse industries (e.g. pharmacy, IT, automobile, biotechnology, food and beverage) yet they all are trans-national companies that deal with multicultural collaborations daily. For example one of the companies is a biotechnology manufacturer that employs about 70 people. Their motto is to "be the world leader in innovative biotechnology manufacturer, and supplying our customer with the best possible biotechnological solutions, and providing advanced laboratory measurements". The participants represented at least eight different nationalities from different countries (Bosnia and Hercegovina = 13.9%, Croatia = 16.5%, Albania = 12.6%, Italy = 14.4%, Serbia = 8.5%, Greece = 9.4%, Slovenia = 12.7%, Montenegro = 12.1%). In our sample, 61.4% of the participants were male and their average age was 35.86 (SD = 9 years). Of the 787 participants, 34.6% (SD = 0.8) were undergraduates or had a bachelor's degree, and 92.8% of the respondents were fully employed in their organizations (SD = 0.26). The employees have been working at their current place of employment for an average of 6.5 years (SD = 6.64) and have been working with their current supervisor for an average of 4.2 years (SD = 4.05). In the sample, 52.1% (SD = 0.52) of the employees performed managerial duties.

2.1.1 Measures

Unless otherwise noted, seven-point Likert-type scales ranging from 1 ("strongly disagree") to 7 ("strongly agree") were used in the study and were all self-reported by the employees.

Metacognitive cultural intelligence was measured according by Ang and Van Dyne (2008) four-items metacognitive cultural intelligence scale. We aggregated all fore metacognitive cultural intelligence items into a single score and the overall metacognitive cultural intelligence reliability score was – α = .92. The questionnaire included items such as "I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds" and "I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me."

Motivational cultural intelligence was assessed with a four-item scale by Ang and Van Dyne (2008), we then aggregated all four motivational CQ items into a single score and the overall motivational cultural intelligence reliability score was – α = .91. The questionnaire included items such as "I enjoy interacting with people from different cultures" and "I am sure I can deal with the stresses of adjusting to a culture that is new to me."

Creativity was measured according to a thirteen-item questionnaire developed by Zhou and George (2001) – α = .95. The employees were asked to assess their behavior and actions within the firm with regard to their ability to come up with new ideas. Questionnaire included items such as "I am a good source of creative ideas" and "I come up with creative solutions to problems." Although employees innovative or creative behavior in one organizational context may in other be perceived as undesirable or disruptive in another (Agars, Kaufman, & Locke, 2008), self-measurement were used because they enable subjective assessments about domain-specific individual creativity behavior in which organizational context the creative process is taking place.

Control variables. We included several control measures to remove the influences of other variables related to the relationship between cultural intelligence and creativity in a culturally diverse environment. Firstly, we used an eight-item scale by Ang and Van Dyne (2008) to control ***cognitive cultural intelligence*** with four-items. The overall cognitive cultural intelligence was aggregated into a single score and the reliability score was – α = .87. The questionnaire included items such as "I know the rules (e.g., vocabulary, grammar) of other languages" and "I know the cultural values and religious beliefs of other cultures." Secondly, we controlled for ***behavioral cultural intelligence*** that was also measured according Ang and Van Dyne (2008) fore-items behavioral cultural intelligence scale. Behavioral cultural intelligence was also aggregated from four items and the overall behavioral cultural intelligence reliability score was – α = .89. The questionnaire included items such as "I change my nonverbal behavior when a cross-cultural situation requires it" and "I alter my facial expressions when a cross-cultural situation requires it."

Thirdly, we controlled for ***knowledge hiding*** with the eight-item scale developed by Connelly et al. (2012) – α = .95 – since knowledge hiding can emerge due to a culturally

diverse environment and can decrease individual creativity (Černe, Nerstad, Dysvik, & Škerlavaj, 2014). Knowledge hiding was aggregated from eight items and questionnaire included items such as "Pretended I did not know what s/he was talking about." and "Said that I did not know, even though I did." Furthermore, we also controlled the ***age, gender, education level, work experience at current place of employment,*** and ***origin of the company*** to see whether the fact that we gathered data on twenty companies from eight different countries had any impact on the results. All control variables were self-reported.

2.2 Results

Table 1 presents means, standard deviations, and correlations for the key study variables. We first observed the factor structure of the focal variables at the individual level. The expected three-factor solution (metacognitive and motivational cultural intelligence, and creativity) fit reasonably with the data (χ^2 [210] = 13720.611, CFI = 0.932, TLI = 0.924, SRMR = 0.044, RMSEA = 0.079). The factor loadings ranged from 0.81 to 0.92 for metacognitive cultural intelligence items, from 0.74 to 0.92 for motivational cultural intelligence, and from 0.68 to 0.83 for creativity items. This three-factor solution (metacognitive and motivational cultural intelligence, and creativity), albeit uncharacterized by extremely high fit indices, was superior to more parsimonious two-factor solutions (motivational cultural intelligence and creativity - χ^2 [118] = 950.277, CFI = 0.917, TLI = 0.905, SRMR = 0.044, RMSEA = 0.095). We should also note that we did not allow residuals to correlate and did not use modification indices.

Table 1: *Descriptive Statistics and Correlations among variables used in research*

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11
1 Education[c]	2.06	0.85	1										
2 Gender[d]	1.64	0.49	.04	1									
3 Age[e]	35.8	9.69	-.05	.03	1								
4 Work experience[e]	6.57	6.64	-.09*	-.00	.62**	1							
5 Company origin[f]	4.27	2.34	-.22**	-.03	.09**	.14**	1						
6 Knowledge hiding	2.31	1.72	-.23**	-.09*	-.03	.02	.44**	1					
7 Cognitive cultural intelligence	4.33	1.33	.21**	.05	.04	.04	-.19**	-.27**	1				
8 Behavioral cultural intelligence	4.34	1.41	.10**	.00	.03	.02	-.20**	-.27**	.61**	1			
9 Metacognitive cultural intelligence	4.78	1.49	.26**	-.03	.03	.00	-.32**	-.53**	.66**	.66**	1		
10 Motivational cultural intelligence	4.71	1.48	.23**	-.00	-.04	-.04	-.32**	-.46**	.64**	.68**	.78**	1	
11 Creativity	4.67	1.33	.22**	.08*	.03	.02	-.25**	-.40**	.39**	.42**	.53**	.49**	1

a n=787. b Coefficient alphas are on the diagonal in parentheses. c For education 1 = "High school diploma", 2 = "Associate's degree", 3 = "Master's degree", 4= "Doctorate degree". d For gender, 1= "female," 2= "male. e For age and work experience were measured in years. f Company origin, 1 = "Bosnia and Hercegovina," 2 ="Croatia", 3 = Albania, 4 = "Italy," 5= "Serbia", 6= "Greece", 7= "Slovenia,"8=Montenegro". * p<.05, ** p<.01, *** p<.001.

2.2.1 Multilevel analysis results

The dataset consisted of two hierarchically nested levels: 787 employees (level-1) nested within 73 groups (level-2), with each group having their own supervisor. Thus, we tested the multi-item within-group agreement (rwg(J)) and interclass correlations (ICCs) of individual-level measures of metacognitive cultural intelligence, motivational cultural intelligence, and creativity. For creativity, the average rwg(j) was 0.86, ranging from 0.22 to 0.97, whereas ICC(1) was 0.60 and ICC(2) was 0.94 ($F = 17.45$, $p = 0.000$). For metacognitive cultural intelligence, the average rwg(8) was 0.78, ranging from 0.35 to 0.95 with ICC(1) at 0.62 and ICC(2) at 0.95 ($F = 18.86$, $p = 0.000$). For motivational cultural intelligence, the average rwg(8) was 0.75, ranging from 0.40 to 0.97 with ICC(1) at 0.61 and ICC(2) at 0.94 ($F = 17.77$, $p = .000$). As such, these statistics justify the level found in prior research dealing with aggregating individual response to the group level (Campion, Medsker, & Higgs, 1993; Gong, et al., 2013; Kirkman, Chen, Farh, Chen, & Lowe, 2009) and are in line with the principles of construct validation by Chen et al. (2004). We used hierarchical linear modeling (HLM) to test the following aspects of our multilevel model: (1) the existence of a multilevel structure, (2) the individual cultural intelligence effect on individual creativity, and (3) the individual metacognitive and motivational cultural intelligence effect on individual creativity in a culturally diverse environment. We developed a set of multilevel models based on our theoretical predictions by using Hox's (2010) procedure for incremental improvement. Thus, all variables were grand-mean centered in the models.

The results of all three models are presented in Table 2. We started our analysis with the intercept-only model by putting individual employee creativity as the dependent variable (Model 1). At this point, we would like to emphasize that HLM reduced the missing variables on level-1 (individual level) and level-2 (group level). Accordingly, in each model there is a different sample size of employees and groups (see Table 2). In model 2, we inserted the controlled variables such as education, gender, age, work experience, company origin, and knowledge hiding as level-1 predictors of creativity. In Table 1, we can see that cognitive and behavioral cultural intelligence are highly and positively correlated with metacognitive and motivational cultural intelligence, thus we put them as controlled variables in our Model 3.

Table 2: *Multilevel analysis results for creativity as the dependent variable*

	Model 1	Model 2	Model 3
Level 1			
Intercept	4.45** (0.11)	5.18** (0.39)	2.63** (0.41)
Education		0.07 (0.07)	0.07 (0.06)
Gender		0.12 (0.11)	0.22** (0.10)
Age		0.00 (0.00)	0.00 (0.00)
Work experience		0.00 (0.00)	0.00 (0.00)
Company origin		-0.15** (0.04)	-0.06* (0.02)
Knowledge hiding		-0.17** (0.04)	-0.09* (0.04)
Cognitive cultural intelligence			0.00 (0.04)
Behavioral cultural intelligence			0.07 (0.04)
Level 2			
Metacognitive cultural intelligence			0.22** (0.06)
Motivational cultural intelligence			0.10* (0.05)
Pseudo R2		0.41	0.55
x^2 (df)	429.65 (72) ***	204.20 (71) ***	108.39 (70) **
Deviance	2543.68	2334.38	2171.30
n (level 1)	73	72	71
n (level 2)	787	732	706

[a] Entries are estimations of fixed effects with robust standard errors. ** p<.01,* p<.05.

The results show (supporting Hypothesis 1) that metacognitive cultural intelligence is positively and significantly related to individual creativity (Model 3: $\gamma = 0.22$, $SE = 0.06$, $p < 0.001$). The results also reveal that motivational cultural intelligence (Model 3: $\gamma = 0.10$, $SE = 0.05$, $p < 0.05$) is also positively and significantly related to individual creativity, supporting Hypothesis 2. Among the control variables, only the companies' origin (Model 2: $\gamma = -0.08$, $SE = 0.03$, $p < 0.05$) and knowledge hiding (Model 3: $\gamma = -0.11$, $SE = 0.04$, $p < 0.05$) were negatively and significantly related to individual creativity. The results supported our argument that metacognitive and motivational cultural intelligence can decrease the social categorization process and lead to increased individual creativity. The results furthermore imply that metacognitive cultural intelligence is more positively related to individual creativity than motivational cultural intelligence.

3 Discussion, contributions and practical implications

The results of the multilevel analysis provided support for our argument based on social categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) that motivational and metacognitive dimensions of cultural intelligence can decrease the social categorization process and are in turn positively related to individual creativity. Moreover, this finding suggests that metacognitive cultural intelligence onis more positively related

to individual creativity than motivational cultural intelligence. These results complement and extend the research in value in diversity perceptive, and more particularly creativity in a culturally diverse environment, as well as hold clear implications for the managers.

3.1 Theoretical contributions

Our findings highlighted three key theoretical contributions to the creativity, diversity, and cultural intelligence literature. Firstly, we enhanced the field's understanding of whether and when cultural differences can enhance individual creativity. Based on social categorization theory, we argued that cultural diversity stimulates social categorization processes on out-group and in-group members that may have a negative impact on individual creativity. We went even further by suggesting that individuals with high metacognitive and motivational cultural intelligence can minimize these social categorization processes and, in turn, be more creative when collaborating with individuals from different cultural backgrounds. In line with the value-in-diversity perspective (O'Reilly, et al., 1998), our studies indicated that cultural diversity can stimulate individual creativity only when an individual possesses individual characteristics, such as a high level of motivational or metacognitive cultural intelligence. Thus, we answered repeated calls for more in-depth research on the relationship between creativity and cultural diversity (Anderson et al., 2004; Anderson et al., 2014; Shalley et al., 2004; Zhou & Su, 2010) by providing empirical evidence that cultural diversity indeed stimulates creativity. However, we stress that for more detailed research on creativity and cultural differences, scholars need to pay attention not only to the situational factors (e.g., culturally diverse environment), but also to the individual differences (e.g., cultural intelligence) that can help employees capitalize the potential benefits of cultural diversity for their own creativity.

A second contribution of our study to creativity literature is the advancement of research on individual motivation as an important driver of creativity (Elsbach & Hargadon, 2006) by adding a focus on motivational cultural intelligence. Although scholars have long implied that individual motivation, especially intrinsic (Amabile, 1985; Amabile, Hill, Hennessey, & Tighe, 1994) and prosocial motivation (Grant & Berry, 2011), can enhance creativity there is no research known to us that links creativity with motivational cultural intelligence. Our results complement the previous research by highlighting the importance of the motivation mechanism that triggers individual creativity. At the same time, we take a step forward by capturing that motivational cultural intelligence as one of the motivational processes is also relevant for individual creativity. Thus, we answer Shalley et al.'s (2004) call for new theoretical perspectives and empirical investigations in order to provide a more in-depth understanding of the motivational processes for creativity. The present study theoretically and empirically demonstrates that motivational cultural intelligence is positively related to individual creativity in a culturally diverse environment.

Moreover, we contribute to the cultural intelligence literature not only by theoretically explaining how the dimensions of cultural intelligence can reduce the social categorization process in order to positively influence a culturally diverse environment, but also by

empirically demonstrating that metacognitive and motivational cultural intelligence positively impact on individual creativity. Thus, by providing evidence that metacognitive and motivational cultural intelligence have the same impact on individual creativity, we answer the call from Van Dyne et al. (2012) for a more in-depth research on cultural intelligence. Furthermore, we improve previous empirical studies indicating that the dimensions of cultural intelligence can have a positive impact on job performance (Chen et al., 2011; Chen et al., 2010), specifically on individual non-routine creativity performance (Sahin & Gurbuz, 2014). Furthermore, our research is in line with Chua and colleagues (2012) as it show that individuals with high metacognitive cultural intelligence are not only more effective in intercultural creative collaborations, but also directly related to their individual creativity. In addition, by identifying that individuals can, with a little help from their own metacognitive and motivational cultural intelligence, manage the negative aspects of cultural diversity, especially the negative effects of social categorization processes, this research is an important theoretical and practical step forward as we show empirically that the dimensions of cultural intelligence are an important driver for individual creativity in a culturally diverse environment.

3.2 Limitations and future directions

We note that our research is subject to several limitations that need to be taken into consideration when interpreting the results. We collected data from diverse industries with the intention of avoiding potential common method biases. However, we relied heavily on self-reported data, especially for individual perceptions of metacognitive and motivational cultural intelligence, even though we realized that individuals without a high level of cultural intelligence capability may lack the awareness of this (Kruger & Dunning, 1999). Therefore, we suggest that for future research, scholars should include the assessments of the employees' dimensions of cultural intelligence from different sources (e.g., teammates or leaders). We thus cannot rule out the possibility of method bias in our research. We hope to see future research address these bias issues, use multiple raters for individual cultural intelligence, and employ more appropriate objective measures in evaluating the metacognitive and motivational cultural intelligence–creativity relationship.

Another potential concern is that we focused only on the actual cultural diversity based on the companies' cultural origin. In diversity literature, scholars usually use the perceived diversity in their research (e.g., Harrison, Price, Gavin, & Florey, 2002; Jehn et al., 1999; Shin et al., 2012), although it may provide more valuable information about individual behavior than the actual diversity (Harrison & Klein, 2007). However, it is possible that individuals fail to assess accurately the perceived cultural diversity; thus, their assessment could be biased (Harrison & Klein, 2007). This is why we only used the actual cultural diversity; however, we do hope that future studies will address this issue by simultaneously researching the actual and the perceived cultural diversity.

Furthermore, we only theorized on the negative impact of social categorization processes on individual creativity; however, we did not test whether social categorization processes

(e.g., on out-group and in-group members) have a direct influence on individual creativity. To offer a better explanation of the mechanism of social categorization processes and its relationship to creativity, future research should also include possible mediators, such as prototype clarity (Fielding & Hogg, 1997), self-prototypically (Hogg & Hains, 1998), prototype valence (Chattopadhyay, George, & Lawrence, 2004), shared objectives (Anderson & West, 1998), and measures for information elaboration (see Kearney, Gebert, & Voelpel, 2009; Van Ginkel & van Knippenberg, 2008). Additionally, by focusing only on the cultural intelligence dimensions, we also neglected other individual capabilities and skills that could decrease the negative aspects of the social categorization process, and in turn enhance the social exchange and creativity among culturally diverse teammates. For example, highly prosocially motivated employees may help minorities because they are keen to help and have a strong desire to benefit from other people (Grant, 2007; Grant, 2008), which could be beneficial in decreasing social categorization processes based on cultural diversity and might, in turn, trigger individual creativity. Thus, future studies should also analyze other individual abilities that could help decrease social categorization processes.

3.3 Practical implications

Our findings offer important practical implications for managers and their employees because they indicate that in today's globalized work environment, managers should be highly motivated to understand how to develop the employees' cultural intelligence potential in order to stimulate their creativity (Elenkov & Manev, 2009; Livermore, 2009). Our research indicates that employees with high metacognitive and motivational cultural intelligence tend to be more creative than their colleagues with low metacognitive and motivational cultural intelligence when collaborating with teammates from different cultural backgrounds. Livemore (2011) implies that although high individual cultural intelligence does not emerge automatically, individuals can improve and develop their cultural intelligence (Erez et al., 2013). Therefore, we propose that managers who are interested in stimulating creativity in a culturally diverse environment should create conditions that would support the employees' improvement of their metacognitive and motivational cultural intelligence. For example, a recent research (Erez et al., 2013; Rosenblatt, Worthley, & MacNab, 2013) indicated that the MBA students developed and increased their cultural intelligence by being exposed to a cross-cultural interaction or having an optimal cross-cultural contact. Moreover, Li et al. (2013) have shown not only that overseas work experience is positively related to the level of individual cultural intelligence, but also that the length of the overseas experience is important. More precisely, they found that the longer employees remain in foreign countries, the more individual cultural intelligence they may develop. Thus, managers should provide real working experiences that would maximize the intercultural interactions of their employees and during which they would gain information about points of cultural differences as well as develop their metacognitive and motivational cultural intelligence in order to be more creative.

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THE ABILITY–MOTIVATION–OPPORTUNITY FRAMEWORK FOR TEAM INNOVATION: EFFICACY BELIEFS, PROACTIVE PERSONALITIES, SUPPORTIVE SUPERVISION AND TEAM INNOVATION

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ABSTRACT: *Based on ability–motivation–opportunity theoretical framework, the study explores the interplay among team members' proactive personalities (abilities), collective efficacy (motivation), and supportive supervision (opportunity), and their interaction in predicting team innovation. Multi-level study of 249 employees nested within 64 teams from one German and three Slovenian hi-tech companies showed that collective efficacy was positively related to team innovation. However, the effect of collective efficacy on team innovation was weaker when high levels of supportive supervision and proactivity moderated this relationship. When teams perceived lower levels of collective efficacy, team proactivity, and supportive supervision were more important for achieving higher levels of team innovation as they were when teams perceived lower levels of motivation. We discuss theoretical and practical implications.*

Keywords: *team innovation, ability-motivation-opportunity theory, collective efficacy*
JEL Classification: M1
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INTRODUCTION

Studies highlighted innovation as one of the primary sources of competitive advantage where the chances of an organization to survive, to be successful and effective in challenging environments are becoming ever more dependent on innovation (Amabile, 1993; Anderson & King, 1991; Chi, Huang, & Lin, 2009; Post, 2012). Organizations seek to exploit the ideas and suggestions of their employees that are a source of idea generation

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and implementation (Anderson, De Dreu, & Nijstad, 2004). Yet, innovation is a complex, multilevel, and emergent phenomenon that requires skillful leadership in order to maximize the benefits of new and improved ways of working (Anderson, Potocnik & Zhou, 2014). With business processes becoming more complex, organizations reorganized work around teams in order to provide faster and more flexible responses to changes in environment (Kozlowski & Ilgen, 2006). Teams have become the basic organizational working unit (Chen et al., 2002), and over 80% of today's work in Fortune 1000 companies is based on a team-work (Hollenbeck, Beersma, & Schouten, 2012). Therefore, teams are the ones who usually propose new ideas and pursue the ideas toward implementation. For any creative proposal to be worked up toward an organizational-level innovation, these meso-analytical influences are critically important (Anderson & King, 1993; Shalley & Gilson, 2004). Even if the importance of innovation has been recognized by scholars, businesses and governments, too little attention is being devoted to organizational teams and how they can facilitate or inhibit innovation (Anderson & West, 1998; Eisenbeiss, van Knippenberg, & Boerner, 2008; Somech & Drach-Zahavy, 2011).

Team environments can foster collaboration and form a desirable basis for implementing new ideas (Černe, Jaklič, & Škerlavaj, 2013), which is why the ability to function effectively as a team member has become vital. Axtell et al. (2000) theorized the importance of efficacy beliefs as an important driver of team innovation. In addition, team proactive personality was positively related to a number of crucial team-level outcomes (Crant, 2000; Kirkman & Rosen, 1999). And finally, a relatively recent meta-analysis by Hulsheger, Anderson, and Salgado (2009) identified support for innovation as one of the strongest predictors of team innovative performance. As such, it is important to understand different drivers as well as their interactions with team innovation across micro and meso-levels.

Innovation research has only recently predominantly focused on company-level outcomes—performance, growth, profit, etc. Both situational and personal elements predict innovation (Chen, Farh, Campbell-Bush, Wu, & Wu, 2013; Somech & Drach-Zahavy, 2011). By engaging in innovation processes, team members exchange knowledge and examine different perspectives (Peralta, Lopes, Gilson, Lourenço & Pais, 2015). The dynamics behind team innovation indicate that individuals are the ones who usually generate new ideas or improved ways of doing things (West, 1987), whereas the team context could considerably influence the implementation of ideas (Scott & Reginald, 1994). Hence, team innovation success depends not only on members individually but also on their combined skills and ways of approaching and solving problems. It has been separately shown that efficacy beliefs and support for innovation influence team innovation (Axtell et al., 2000; Hulsheger et al., 2009), but we do not yet know the nature of their joint effects and how are they related with team members' proactivity. Scholars have applied the ability-motivation-opportunity (AMO) model (Appelbaum, Bailey, Berg, & Kalleberg, 2000) mostly at the individual-level; however, it can also be applied to explain team-level outcomes. Our understanding of innovation as a broader, multilevel phenomenon therefore needs to address important interactive questions, such as "How do the employees' motivation, ability and opportunity interplay in influencing team innovative outcomes?"

In order to fully address this question and to understand the factors that could facilitate or inhibit team innovation, we outline and test a multilevel model by building upon the AMO model. The AMO framework is assembled from basic concepts of psychology: motivation has been perceived as the incentive toward a behavior; ability as skills and capabilities essential to the performance of a behavior; and opportunity as contextual and situational constraints relevant to the performance of the behavior. Efficacy beliefs can be perceived as an adjacent motivational mechanism by reflecting the extent to which individuals view themselves as capable of accomplishing tasks and how it motivates them to engage in innovative behaviors (Bandura, 1997; Chen et al., 2013). The proactive personality is a personal disposition toward proactive behavior (Bateman & Grant, 1993). Proactive personality is a relatively stable propensity involving expressing initiative, identifying opportunities, taking action, and insisting in attempts to endorse change (Bateman & Crant, 1993). Proactive individuals posses a creative, self-responsible, positive thinking skills, they are pathfinders who find and solve problems (Leavitt, 1988). We argue that proactive personality signifies the skills for an individual to engage in active changing of the work environment. Hence, it reflects ability as it represents skills and knowledge related to the action. Finally, supportive supervision reflects opportunity to perform, as opportunity denotes the invitation to participate and take part, or get involved. Leaders with their behavior (Collings & Mellahi, 2009) can create opportunity to encourage employees' personal and professional growth (Contino, 2004), enable employees' skill development (Deci & Ryan, 1987) and create opportunities to participate. Under supportive supervision, work environment provides team members needed support. Our analysis extends understanding of how the team context can motivate members to engage in team innovative behavior. In addition, we generate new knowledge of how leadership support and member abilities can simultaneously motivate team members to perform innovatively. Therefore, we propose that it is of an outmost importance to concurrently examine at multi levels what drives team members to engage in team innovation process.

Thus, our main aim is to contribute to the literature by investigating the joint influence of team proactive personality, efficacy, and perceptions of supportive supervision on team innovation. First and most generally, by building upon the AMO framework and adopting a micro-meso perspective that integrates models of individual beliefs, personalities, support, and team innovation, we seek to contribute to the innovation literature by offering a more complete account of team innovation. In addition, we also contribute empirically to the leadership and innovation literature by suggesting certain leadership practices and by exploring the combined role of structural and interpersonal conditions for team innovation by clarifying the mechanisms through which individuals influence innovation. Second, an important theoretical contribution of the paper is in applying the AMO model, generally investigated and used at the individual level, to the team level. We believe that the three-way interaction model proposed here represents a useful application of this approach to acquiring insights into key aspects of the team innovation process.

And finally, our third contribution is to multilevel theory by incorporating emergent constructs at the individual level to achieve the outcome on team level. Organizations

are made of interacting levels (such as departments, teams, and individuals) with some degree of interdependence that consequently leads to bottom-up and top-down influence mechanisms (Costa et al., 2013). As Morgeson and Hofmann (1999, p. 258) stated, the composition of a unit can have "*a pronounced influence on collective behavior and systems of interaction, thereby influencing the phenomena that ultimately emerge*". The model in the paper assumes that there is a hierarchical data set, with one single outcome variable that is measured at the team level and explanatory variables at individual and team levels. According to Kozlowski and Bell (2003), p.7) *"teams don't behave, individuals do; but they do so in ways that create team level phenomena*". Individuals are nested within teams, and teams in turn are linked to and nested in organization, a larger multi-level system. This hierarchical nesting, which is characteristic of organizational systems, necessitates the use of levels approach in efforts to understand and investigate team phenomena (Kozlowski & Bell, 2003). According to Kozlowski and Klein (2000) individual cognitions, attitudes, and behaviors can also influence the performance and outcomes of teams and organizations (bottom-up effects). In addition, Morgeson and Hofmann (1999) suggest that emergent constructs (e.g. collective personality) may originate from different sources yet maintain similar meanings and functions to their individual-level counterparts. Beyond theoretical basis among team innovation models, we posit that our multilevel approach is likely to account for differences in team innovative performance better than would individual- or team-level models alone. Thus, by adopting a multilevel perspective that integrates models of team innovation, we seek to contribute to the literature by attaining a fuller understanding of the innovation process as a whole.

1 THEORETICAL BACKGROUND AND HYPOTHESIS

The dynamics of today's discontinuous, complex, and global economy have challenged the doctrines of traditional business operations. Organizations can no longer remain static, they must constantly adjust and redefine themselves. The AMO framework has become an established theoretical basis for explaining work performance (Blumberg & Pringle, 1982). Organization needs to increase employees' abilities, motivation and opportunities to participate in order to effectively enhance employees' innovative behavior as those are critical to direct the effort towards the desired outcome (Schimansky, 2014). AMO model proposes that ability dimension (proactive personality) of the model guarantees that employees have the appropriate skill levels to use the opportunity to engage in active changing of the work environment. Employees also need the motivation (collective efficacy) to use the elective effort, and the opportunity (supportive supervision), which refers to involvement in the decision-making process of the company (Appelbaum et al, 2000). Additionally, Hutchinson (2013) argues that ability can be influenced by recruitment and selection to ensure that capable employees are recruited in the first instance, and by training, learning and development. Motivation can be influenced by extrinsic (e.g. financial) and intrinsic rewards (e.g. interesting work) performance reviews, feedback, and work– life balance. Opportunity can be influenced by communication, involvement initiatives, teamworking, and autonomy.

Although researchers have conceptualized efficacy beliefs at multiple levels of analysis, only limited bottom-up multilevel research has been conducted (Chen & Bliese, 2002; Tasa, Sears, & Schat, 2011). There is strong reason to believe that development of efficacy beliefs is not isomorphic at individual and team levels. Factors that shape the evolution of collective efficacy are different from the antecedents of self-efficacy (Chen & Bliese, 2002), and perception of *"can I accomplish this task?"* is different from *"can we accomplish this task?"* (Mischel & Northcraft, 1997).

Perceived efficacy beliefs play a crucial role in individual's and team's functioning by affecting behavior of each person directly and indirectly (Fernández-Ballesteros, Díez-Nicolás, Vittorio Caprara, Barbaranelli, & Bandura, 2002). They influence the way people think, whether they think unpredictably or strategically, whether they see situations optimistically or pessimistically, how high they set their goals, and how much effort and commitment they put forth to achieve them (Bandura, 2000). However, people commonly do not live their lives in autonomy, and many of their goals are achievable only through interdependent efforts of their team. Hence, they have to work together with other team members, coordinating their actions to accomplish together what they are not able to do on their own, and they will most probably be influenced by the views, motivation, effectiveness, and performance of their colleagues.

Collective efficacy is both a cognitive product arising out of group interaction and a motivational force in teams (Tyran & Gibson, 2008). It refers to "*a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments*" (Bandura, 1997, p.477). Therefore, the core of perceived collective efficacy resides in the minds of team members because the team operates throughout the behavior of its individual members (Bandura, 2000). Research has demonstrated that teams with a strong group belief in their ability are more effective (Tyran & Gibson, 2008). Indeed, expectations of efficacy beliefs define the extent of individuals' task-related effort and whether and for how long they persevere. Bandura (1997) argued that there is an important difference between possessing skills and being able to use them well. In order for a team to be successful, team members have to believe in their capabilities to exercise control over events to accomplish desired goals. Therefore, teams with the same skills may perform poorly, adequately, or extraordinarily, depending on whether their perceived collective efficacy beliefs boost or harm their motivational state (Bandura, 1990).

Consistent with Gully et al. (2002) and others (e.g., Jex & Bliese, 1999; Parker, 1994), we suggest that collective efficacy perceptions reside within individuals and therefore propose to measure it at the individual level and aggregate it to the collective level. Collective efficacy refers to individual members' perceptions of their team's competency (Bandura, 1986) or aggregated ability to successfully complete a designated task (Guzzo, Yost, Campbell, & Shea, 1993). Therefore, collective efficacy beliefs develop into homogenous beliefs due to regular contacts and mutual experiences. Individuals working in the team are likely to be a part of the same process and collect similar information (Hinsz, Tindale, & Vollrath, 1997). As result, all members probably concentrate on similar information when assessing their collective efficacy leading to emergence of collective efficacy as a

shared referent-shift construct (Chan, 1998; Chen, Mathieu, & Bliese, 2005), where the referent of collective efficacy shifts from individual to team level.

In teams, it is especially important to observe collective efficacy as research found that efficacy beliefs determine whether an individual will decide to engage in certain behavior, and if so, how much effort will be invested to accomplish particular tasks (Bandura, 1997). Efficacy beliefs positively predict teamwork behaviors displayed by team members (Tasa, Taggar, & Seijts, 2007), team outcomes (Gully, Incalcaterra, Joshi, & Beaubien, 2002), job attitudes, and job performance (Chen et al., 2002). Bandura (1986) believed efficacy beliefs provide the foundation for human motivation. Unless people believe that their actions can produce the outcomes they desire, they have little incentive to act or to persevere in the face of difficulties. Such sense of confidence generated by high levels of efficacy helps teams carry on when facing difficulties. Moreover, collective efficacy has long been argued as a critical enabler of shared goal commitment that contributes to a high team willingness to innovate and perform (Griffin, Neal, & Parker, 2007; Liu, Chen, & Tao, 2015). Collective efficacy thus can motivate two major sets of behavioral tasks (i.e., idea generation and idea implementation), which result in innovation performance in teams It also motivates members to engage in innovative behaviors, as it captures confidence in the ability to generate and implement new ideas. In line with theoretical arguments suggesting that efficacy beliefs capture confidence in the ability to generate, promote and implement new ideas or initiatives, Chen et al. (2013) found a positive relationship between efficacy beliefs and individual innovative performance. This justifies our focus on efficacy belief for the present study.

Employees' proactive personality is increasingly important for organizations seeking to adapt and survive in uncertain economic environments (Bal, Chiaburu, & Diaz, 2011; Grant & Ashford, 2008; Parker, Bindl, & Strauss, 2010). Study made by Buss (1987) showed that individuals influence their situations with their behavior and people are not just passive recipients of environmental forces but they influence their own environments. People are assumed capable of intentionally altering situations and directly changing their current circumstances, including their physical environment (Buss, 1987). Moreover, individuals differ in this proclivity. In triadic reciprocal causation, the relative influence of person, behavior, and environment varies not only across activities and circumstances, but across people (Bandura, 1986). Buss (1987) found strong differences in people's use of manipulation tactics across contexts, and considers the use of such tactics a type of individual personality difference. The proactive personality, as Bateman and Crant (1993) conceive it, is one who is relatively unconstrained by situational forces, and who effects environmental change. At the individual level, proactive personality has been found to predict individual innovation (Seibert, Kraimer, & Crant, 2001).

The importance of teamwork is increasing in last decades, hence investigating whether the impact of proactive personality extends to the team level is an important step in understanding how team composition relates to team innovation. We focus on team-level proactive personality, a behavioral tendency involving showing initiative, identifying opportunities, taking action, and insisting in attempts to enact change (Bateman &

Crant, 1993). Study made by Williams, Parker and Turner (2010) showed that the most proactive teams had members with higher-than-average proactive personalities and lower heterogeneity in proactive personality. Team members with proactive personalities are motivated to present ideas and suggestions how to improve the way the work is done, to recognize potential problems and think of ways to get around them. Thus, the stronger personalities team members have the more suggestions and ideas the team will consider. In addition, interaction amongst team members with proactive personalities is likely to stimulate team discussions resulting in the team anticipating problems and/or generating collective ideas about different ways of improving things.

Team-level proactive personality has theoretical similarity with individual-level proactive personality and thus defines the extent to which a team engages in self-starting, future-focused action that aims to change the external situation or the team itself. Team-level proactive personality is about the way the team behaves as a group, that is, as an interdependent and goal-directed combination of individuals (Morgeson & Hofmann, 1999). Examples of proactive teams include the team introduction of new work methods, team's prevention of problems rather than just reacting to them, and team's scanning the environment in order to identify probable opportunities (Erkutlu, 2012).

As such, team proactive personality is not the same as the sum of individual proactive team members but is collective in emphasis. Team members with a proactive personality are inclined to propose ideas and make suggestions as to how to improve the way work is done, as well as to identify potential problems and think of ways to get around them. Consequently, the greater the number of members with proactive personalities the more ideas and viewpoints the team will deliberate. Additionally, interaction amongst members with proactive personalities is likely to encourage team discussions resulting in the team predicting problems and/or generating collective ideas. There might be proactive members within a team, but unless their effort is coordinated, the team itself might not be proactive. It is the mean of individual proactive personality measure aggregated to the team level (Parker & Sprigg, 1999). Therefore, it can be proposed that the mean level of proactive personality in the team will be positively related to team innovative behavior.

Team proactive personality develops into emergent, homogenous construct due to regular contacts and interactions of team members (Williams et al., 2010). Through these interactions, team members develop shared and lasting ways of responding to challenges. Proactive team members put forward ideas on work improvement and suggestions how to avoid problems. Consequently, interaction amongst proactive team members likely encourages team discussions, which lead to the generation and implementation of collective ideas. We therefore propose that team-level proactive personality emerges as a consensus construct (Chan, 1998; Chen et al., 2005; Williams et al., 2010), as it maintains the same meanings across different levels of analysis, and it uses an individual as the construct's referent.

Team team-level proactive personality can be viewed as a moderating mechanism on the relationship between collective efficacy and team innovation. Leveraging Chen and

Kanfer's (2006) conceptualization, we propose that proactive personality refers to the relatively stable propensity to promote change and take action to influence the environment (Bateman & Crant, 1993). Research supports positive link between proactive personality and innovation (Seibert et al., 2001) Indeed, proactive personality has been shown to relate positively to innovation and to influence the transition from idea generation to idea implementation (Seibert, Kraimer, & Crant, 2001). Furthermore, Sheikhiani, Bindu and Fakouri (2011) argued that proactive personality is one of the most important factors that has an impact on efficacy beliefs.

Perceptions of efficacy beliefs may facilitate beneficial outcomes, such as innovation, when combined with proactive personality (Chen et al., 2013). Accordingly, while perceived team-level proactive personality should represent an important condition for individual perceptions of collective efficacy to predict team innovation, its impact may depend on the level of perceived supervisory support. Studies report reciprocal relationship between team innovation and supervisory support (Ettlie, 1983; Mohamed, 2002), as rapid changes in business environment call for faster innovations (Mohamed, 2002). Therefore, to remain competitive, it is crucial to obtain innovation support of supervisors.

Eisenberger, Huntington, Hutchison and Sowa (1986) argue that when an employee believes that his or her organization or immediate supervisor is supportive, the employee will demonstrate more favorable work-related attitudes and behaviors (Marique, Stinglhamber, Desmette, Caesens, & De Zanet, 2013; Wang, Walumbwa, Wang, & Aryee, 2013). Du, Shin and Choi (2015) showed that collective efficacy perceptions significantly predicted employees' job performance. In addition, growth curve analysis showed that such perceptual congruence increased over time when the focal employee experienced a high level of support from team leaders. Support for innovation portrays the "*expectation, approval and practical support of attempts to introduce new and improved ways of doing things in the work environment*" (West, 1990, p. 315). In a work environment where supervisor supports innovation, attempts to innovate that are not successful are more likely to be tolerated, and team members may be more likely to take risks to implement new ideas (Sethi, Smith, & Park, 2001). Supervisory support is exhibited through various behaviors, such as creating opportunities to participate, strengthening the group's collective skills and approach, clarifying purpose and goals, building commitment, removing externally-imposed obstacles, and creating opportunities for performance (Katzenbach & Smith, 1993).

Supportive supervision is hence a variable that reflects the extent to which supervisor of the team displays supportive behaviors. If team members hold similar perceptions of supportive supervision, it is operationalized as a group-level construct. Supportive supervision develops into a homogenous construct due to regular contacts within the team and its perceptions converge in a team, both because team members are subject to the same set of structural influences and because these perceptions develop out of salient shared experiences. We therefore propose that supportive supervision emerges as a shared referent-shift construct that maintains the same meanings across different levels of analysis but it uses the aggregate – not the individual – as the construct's referent (Chan, 1998; Chen et al., 2005).

Research on supportive supervision has examined several dimensions of supervisory process, including its effect on efficacy beliefs. Supervisors who enable subordinates to understand their goals and assist in their goal realization contribute to their subordinate's experiences (Ballantine & Nunns, 1998). As a result, supportive supervision contributes to perceptions of efficacy beliefs, and supportive behaviors are likely to enhance individual perceptions of collective efficacy.

Supportive supervisors promote a safe environment for team members to express novel and original ideas as well as provide them with the resources to do so effectively (Hunter & Cushenbery, 2011). During the implementation phase, supervisors support some ideas whereas discarding others and push the ones that do appear viable into the production phase. Supportive supervision creates opportunities for team members' exploratory and critical thinking processes, and so it may establish a working environment where unconventional and risk-taking approaches are strongly valued and innovation is given high priority. Supportive supervision captures teams' shared belief that innovation is important and valued in their team, as well as shared expectations regarding the likely success of engaging in innovation (Chen & Kanfer, 2006). When support for innovation is high, team members are more likely to initiate and persist in innovative behaviors themselves as well as coordinate their innovative efforts with others. In addition, supportive supervision aims to lead team members to expend their effort and go beyond the expected.

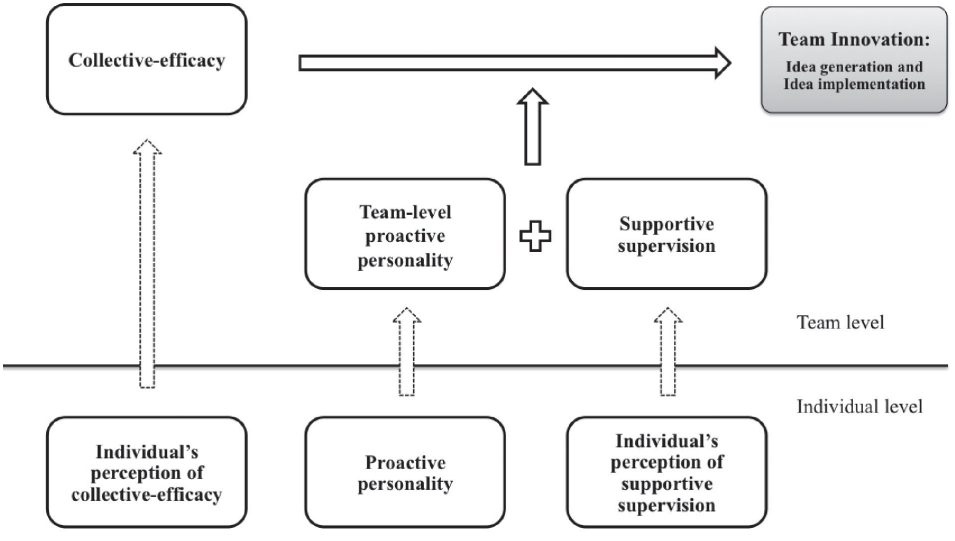
Based on the considerations above, we expect a three-way interaction between individuals' perceptions of collective efficacy team-level proactive personality and supportive supervision in relation to team innovation. The interaction postulated by the AMO model (i.e., the outcome is a function of ability, motivation and opportunity) should hold for individuals' perceptions of collective efficacy, team-level proactive personality and supportive supervision. We propose that individuals' perceptions of collective efficacy can be viewed as a motivational mechanism through which team innovative behavior is influenced. In addition, although team members may have an accurate assessment of their capabilities, they may not necessarily engage in innovative behaviors if they lack proactive personality. To successfully achieve the desired outcome, team must possess the belief that they are capable of achieving the goal. However, without proactive actions, team members less likely overcome barriers that they are facing. Hence, it is reasonable to expect a positive relationship between collective efficacy and team innovation to be contingent upon team-level proactive personality.

Furthermore, perceived supervisor support can, for instance, represent a condition under which the supervisor creates opportunities for employees not to be afraid of taking risk, trusting in their collective capabilities and proactively responding to different situations. Williams, Parker and Turner (2010) found that the most proactive teams were those with higher levels of transformational team leaders, and a higher-than-average level of proactive personality. Supportive supervision decreases job stress that interferes with work performance and provides team members with opportunities that encourage their collective efficacy. This, in turn, should make members reporting high levels of proactive

personality more willing to introduce new work methods, prevent and react to problems, and scan the environment to identify potential opportunities implied by perceptions of collective efficacy. On the other hand, if members perceive lower levels of supervisory support, they might feel less secure in their work role, regardless of their belief in their collective capabilities and proactive personality. We therefore hypothesize the following:

H: *The relationship between individuals' perceptions of collective efficacy and team innovation is jointly moderated by individuals' perceptions of team-level proactive personality and supportive supervision. Specifically, collective efficacy more strongly relates to team innovation at higher levels of perceived team proactive personality and supportive supervision.*

Figure 1: *Efficacy beliefs, proactive personality, supportive supervision and team innovation*



2 RESEARCH METHOD

2. 1 Sample and Procedures

Participants were 249 employees (185 team members and 64 team leaders) working in 64 R&D teams from a German hi-tech electronics company and three Slovenian hi-tech biotechnology, electronics, and IT companies. Studied companies varied by size (from small, medium to large enterprises) with range of employees from 50 to more than 10.700. We sampled R&D teams across firms from information technology, telecommunication, biotechnology and electronics industries, which allowed us to control for industry-level differences that could affect team innovativeness. Also, we worked closely with team leaders

in all companies to ensure that each sampled team (a) was primarily responsible for R&D activities, (b) included members from different functions who worked interdependently with each other towards collective goals, and (c) included members worked together for a minimum of two months so shared perceptions of team leader and behavior could emerge. As such, teams were similar in key design features, such as team membership, types of team tasks, and team interdependence. A comparison of respondents to non-respondents provided no evidence of response bias.

Complete data were obtained from 185 team members (71% response rate) and 64 team leaders (83% response rate) of 77 R&D teams in four companies. Average team size in the final sample was 3.28 (range = 3 to 6 members per team – including leader). Of team members, average company tenure was 7.5 years and average age was 35 years; 85% were male, 7.6% had doctoral degrees, 30.8% had master degrees, 40.5% had university degrees, 15.2% had higher education degree, 4.3% had high school degrees, and 1.6% had professional middle school degrees. Of team leaders average company tenure was 10.6 years and average age was 40 years; 92.2% were male, 32.8% had doctoral degrees, 21.9% had master degrees, 35.9% had university degrees, and 9.4% had higher education degree.

2.2 Measures

In order to avoid problems with common method bias, we used following approaches. First, because one of the major causes of common method variance is obtaining measures of both predictor and dependent variables from the same rater (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), data were collected by two separate questionnaires: one for team members and the other for their leaders. Leaders were asked to evaluate team innovation and because the data came from different sources we linked them together with identifying variable (team ID). Second, the items used in our study are part of a larger-scale questionnaire; the respondents would therefore likely not have been able to guess the purpose of the study and force their answers to be consistent. Third, five items in questionnaire were reverse-coded.

Efficacy beliefs: Collective efficacy was measured using seven items that addressed individuals' belief in their team's capabilities to organize and execute the courses of action adapted from and from Riggs et al. (1994). Responses for this scale were based on a 7-point scale ranging from 1 "completely inaccurate" to 7 "completely accurate". Items included "*The team I work with has above average ability*"; and "*This team is not very effective*" (α=.92).

Proactive personality: The mean level of proactive personality was measured by aggregating individual proactive personality measure to the team level. Individual-level proactive personality was assessed using four of the highest loading items from Bateman and Crant (1993). This measure has proven reliability and validity (e.g., Bateman & Crant, 1993) and the same abbreviated scale has been used elsewhere (e.g., Parker & Sprigg, 1999; Williams et al., 2010). Responses for this scale were based on a 5-point scale ranging from 1 "*not*

true at all" to 5 "*very true*". Example items included: "*If I believe in an idea, no obstacle will prevent me from making it happen*" and "*I am excellent at identifying opportunities*" (α=.93)

Supportive supervision: Supportive supervision was measured using a four-item scale based on Manz and Sims's (1987). Team members were asked whether the supervisor encourages employees to engage in self-goal setting, self-reinforcement, self-expectation, and self-observation/evaluation. Sample items include "*Encourages us to expect a lot from ourselves*" and "*Encourages us to set targets for our team performance*" (α = .89). The 5-point scale ranged from 1 "strongly disagree" to 5 "strongly agree".

Team innovation: We operationalize team innovation as the combination of the quantity and quality of ideas that are developed and implemented (Eisenbeiss et al., 2008). Team innovation was measured using 22 items from Eisenbeiss, van Knippenberg and Boerner's (2008) measurement scale. Team leaders had to indicate quantity and quality of ideas developed within the team as well as of ideas implemented. Scales ranged from 1 to 7 but the anchors varied depending on the question. For example, the response for developing ideas, "*My team generates ideas about new targets or objectives*." ranged from 1 "no new ideas generated" to 7 "many new ideas generated". The response for idea implementation, "*How would you assess the quality of implemented ideas according to their novelty*?" ranged from 1 "not at all novel" to 7 "extremely novel" (α = .96).

Controls: Before describing the methodology we used to test our hypotheses, we wish to emphasize that our intention is not to examine a complete model of team innovation, but rather to examine the role of few potentially important variables namely efficacy beliefs, proactive personality, and supportive supervision. In testing this hypothesis we acknowledge the role of other variables that may be correlated with innovation and therefore should be controlled for in this study. We controlled for team aggregated values of member's gender, age, country of residence, level of education, and tenure (years in the company).

We controlled for gender, as there is evidence (consistent with our sample) that there are fewer women than men in technology-oriented firms, which could potentially pose additional challenges for women in such firms (Eden, 1992). We controlled for age because as Kanfer and Ackerman (2004) showed that motivation vary across one's lifespan. We also controlled for country of residence as we were interested if there are any major differences between employees living in different countries. In addition, employees with higher education are more likely to be capable to generate and implement new innovative ideas. Furthermore, we controlled for team size, because larger teams usually deal with more complex tasks, which could challenge innovation processes (Chen et al., 2013). Finally, organizational tenure of team members is more likely to affect their attitudes toward innovation. More tenured employees may have more psychological commitment to the organizational status quo and values (Staw & Ross, 1980). Therefore, they may resist the changes (descriptive statistics are presented for all variables in Table 1 in Appendices).

3 RESULTS

We tested our hypothesis and it predicted significant relationships among the variables associated with innovation: efficacy beliefs, proactive personality, and supportive supervision. The correlations among these variables, presented in the Table 1 on the following page, indicate that the data were consistent with our hypothesis.

We analyzed the data using multivariate hierarchical regression analysis (Table 2 summarizes the multivariate hierarchical regression results). Because we assumed the demographic variables to be causally prior to all others, we entered them in the first step of multiple hierarchical regression as control variables: gender, age, country of residence, level of education, tenure, and team size; and they accounted for 2.5% of the total variance in team innovation, $F = .75$, $p = .61$. However, neither gender ($B = .06$, $SE = .21$, $\beta = .02$, $p = .78$), country of residence ($B = .15$, $SE = .22$, $\beta = .08$, $p = .51$), age ($B = -.20$, $SE = 0.15$, $\beta = -.13$, $p = .19$), level of education ($B = -.05$, $SE = .12$, $\beta = -.04$, $p = .69$), tenure ($B = -.03$, $SE = .09$, $\beta = -.04$, $p = .72$), or team size ($B = .06$, $SE = .07$, $\beta = .07$, $p = .39$) were significantly related with team innovation. The regression at the higher level of analysis required the use of aggregated scores, so we aggregated individuals' perception of collective efficacy to the team level and they yielded acceptable values (Mean rwg = .93, SD rwg = .18; ICC[1] = .66, ICC[2] = .85, $F = 6.64$, $p = .00$). We aggregated also results from individuals' proactive personality (Mean rwg = .89, SD rwg = .20; ICC[1] = .76, ICC[2] = .90, $F = 10.15$, $p = .00$) and individuals' perceptions of supportive supervision to the team level (Mean rwg = .83, SD rwg = .21; ICC[1] = .65, ICC[2] = .84, $F = 6.33$, $p = .00$) and they both yielded acceptable values.

Table 1: *Descriptive statistics and Inter-Item Correlation Matrix*

	Mean	St. dev.	Reliabilities (Cronbach alpha)	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Gender	1.85	0.35	n.a.	1									
2. Country	1.43	0.50	n.a.	.23**	1								
3. Age	2.01	0.63	n.a.	0.01	.42**	1							
4. Education	4.17	0.75	n.a.	0.14	.59**	.24**	1						
5. Tenure	3.15	1.06	n.a.	-0.01	.44**	.65**	.18*	1					
6. Team Size	3.28	1.20	n.a.	0.02	.44**	.25**	.15*	.26**	1				
7. Collective Efficacy	4.86	0.85	0.92	0.11	.21**	0.07	-0.03	0.08	0.11	1			
8. Team-level Proactive personality	2.47	0.79	0.93	0.04	-0.07	-0.07	-0.08	-.17*	0.02	.68**	1		
9. Supportive Supervision	3.69	0.75	0.89	0.04	0.10	.161*	-0.01	.17*	0.08	.62**	.72**	1	
10. Team Innovation	4.25	0.97	0.96	0.04	0.02	-0.11	-0.02	-0.08	0.06	.59**	.73**	.65**	1

Note: N = 185, *correlation is significant at the $p < 0.05$ level, **correlation is significant at the $p < 0.01$ level.

Table 2: *Results of multivariate hierarchical regression analysis*

	Model 1	Model 2	Model 3	Model 4
1. Gender	.059 (.21)	-.048 (.14)	-.114 (.13)	-.139 (.13)
2. Country	.147 (.22)	.027 (.15)	-.039 (.15)	.017 (.15)
3. Age	-.201 (.15)	-.293** (.10)	-.225* (.09)	-.226* (.09)
4. Education	-.049 (.12)	.069 (.08)	.127 (.08)	.111 (.08)
5. Tenure	-.033 (.09)	.035 (.06)	-.060 (.06)	-.076 (.06)
6. Team Size	.059 (.07)	.028 (.04)	.048 (.04)	.049 (.04)
7. Collective Efficacy		.134 (.07)	.042 (.07)	-.053 (.08)
8. Team Proactive personality		.417*** (.09)	.382*** (.08)	.392*** (.08)
9. Supportive Supervision		.269*** (.08)	.212**(.08)	.134 (.09)
10. Collective Efficacy x_ Proactive personality			-.025 (.08)	-.058 (.08)
11. Collective Efficacy x Supportive Supervision			-.256*** (.07)	-.147 (.09)
12. Proactive personality x Supportive Supervision			.143 (.08)	.128 (.08)
13. Collective Efficacy x Proactive personality x Supportive Supervision				.093* (.05)

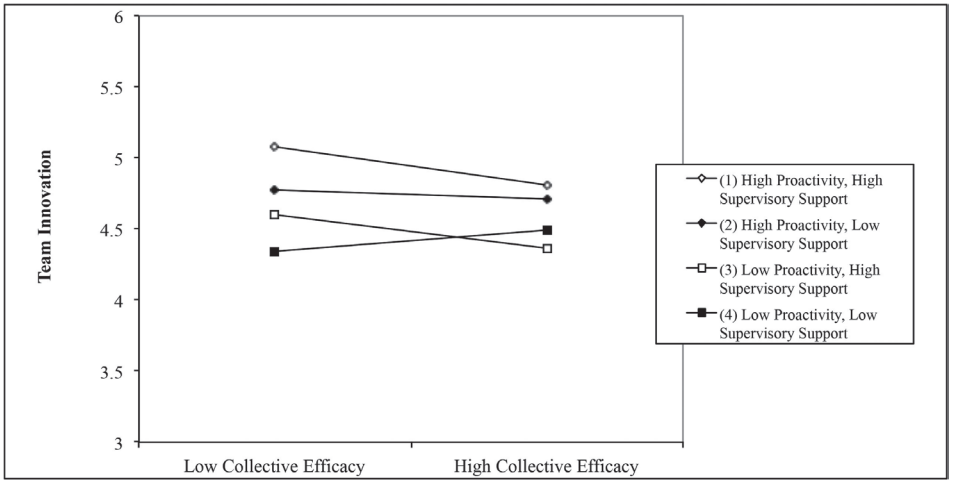
Note: N = 185, values are standardized coefficients, with standard errors in parentheses. Team innovation is the dependent variable.
*correlation is significant at the $p < 0.05$ level, **correlation is significant at the $p < 0.01$ level and ***correlation is significant at the $p < 0.001$.

After entering control variables (gender, age, country of residence, level of education, tenure, and team size) in Step 1, we aggregated individuals' perception of collective efficacy, proactive personality and supportive supervision in Step 2. They accounted for additional 57.1 % of explained variance in team innovation, $F = 28.67$ $p = .00$. The inclusion of all three two-way interaction terms (Collective efficacy × Proactive personality, Collective efficacy × Supportive supervision, Proactive personality × Supportive supervision) in a third step added significantly to the explained variance of team innovation, $\Delta R^2 = .06$, $F= 27.39$, $p = .00$. Finally, in step 4, the three-way interaction term (Collective efficacy × Proactive personality × Supportive supervision) was entered into regression. The three-way interaction term was statistically significant ($t = 2.01$, $p < .05$). Whereas the addition of the three-way interaction term explained an additional 1% of the variance in team innovation, leading to a total explained variance of $R^2 = .66$, none of the individual two-way interaction term were statistically significant. The effect of collective efficacy on team innovation was moderated by team-level proactive personality and supportive supervision.

To demonstrate the form of the three-way interaction, we created four combinations of individuals' perception of collective efficacy and team innovation (at one standard deviation above and below the mean) and plotted one collective efficacy – team innovation slope for each group. As illustrated in Figure 2, the relationship between collective efficacy and team innovation is moderated by perceived proactive personality and supportive supervision. Negative relationship between individuals' perceptions of collective efficacy and team innovation was found for team members reporting high levels of supportive supervision and high levels of proactive personality. In contrast, a positive relationship between individuals' perceptions of collective efficacy and team innovation was found for employees reporting low levels of supportive supervision and low levels of team-level proactive personality. These findings suggest that supervisors are of vital importance for facilitating team innovation in settings where levels of perceived collective efficacy are low.

The slopes for the two low proactive personality groups (Group 3-high supportive supervision, and Group 4-low supportive supervision) were significantly different from each other ($t = - 3.577$, $p = .000$), suggesting that high levels of supportive supervision in combination with low levels of proactive personality result in higher levels of team innovation in the case of low collective efficacy, but produce lower levels of team innovation in the case of high levels of collective efficacy. The slope for high proactive personality and low proactive personality (Group 1-high supportive supervision, and Group 4-low supportive supervision) were significantly different from each other ($t = - 2.649$, $p < .009$), suggesting that high levels of supportive supervision in combination with high levels of proactive personality result in highest levels of team innovation in both levels of collective efficacy, but (as opposed to Group 4) produce a negative line of the relationship, suggesting that low levels of collective efficacy are more suited for fostering team innovation in the case of high supportive supervision and high proactive personality.

Figure 2: *The moderating role of individuals' perception of* team-level proactive personality *and supportive supervision on relationship between collective efficacy and team innovation at −1 SD (low) and +1 SD (high) of the centered means.*



4 DISCUSSION

By drawing upon the theoretical perspectives of personalities and beliefs (Bandura, 1997; Chen et al., 2013; Williams, Parker, & Nick Turner, 2010), team-level emergent states (Marks, Mathieu, & Zaccaro, 2001), and multilevel theory (Chen et al., 2005; Kozlowski & Klein, 2000), we investigated how individual-level elements (aggregated to team level), as well as their interplay, influence team innovation. Our findings largely validated our hypothesis that relationship between individuals' perceptions of collective efficacy and team innovation is moderated by proactive personality and supportive supervision.

In line with our hypothesis, we found support for a three-way interaction of individuals' perceptions of collective efficacy, team-level proactive personality and supportive supervision in relation to team innovation. The form of interaction demonstrates that in situations with high supportive supervision, proactive personality results in highest levels of team innovation in both levels of collective efficacy, but produce a negative line of the relationship, suggesting that low levels of collective efficacy are more suited for fostering team innovation in the case of high supportive supervision and high proactivity.

4. 1 Contributions and Theoretical Implications

This paper sets out the foundations and outlines a multilevel approach for studying team innovation process. We suggest that such an approach provides a more comprehensive interpretation of the interplay between the individual and the team in understanding

the innovation processes. The overarching advantage of multilevel approach over single-level approach includes the ability to study the interaction of individuals' perception of collective efficacy (motivation) over proactivity (ability) and supportive supervision (opportunity) to achieve higher levels of team innovation (outcome).

We contribute to the literature in three ways. First, most generally, by building upon the AMO framework and adopting a micro-meso perspective that integrates models of individual beliefs, personalities, support, and team innovation, we contribute to the intersection of the literature on organizational behavior and innovation management by elaborating the importance of the AMO framework at the team-level innovation management, which posits that a team's actions (and not just an individual's) are driven by all three elements. With AMO model we show that team innovation is the function of team members ability, motivation and opportunity. Members will perform well when they are able to do so (because they have the necessary knowledge and skills to the job), they have the motivation to do so (they will do the job because they want to) and finally, there will be enhance performance if their work environment provides the necessary support (for example through empowerment). Therefore, team innovation may be understood as a result of all three of them: motivation (efficacy beliefs), which captures the force that pushes people toward certain goals; ability (proactivity) represents team's ability to promote change and take action to influence the environment and opportunity (supportive supervision), which represents the environmental or contextual mechanisms that enable action by creating opportunities for performance, and enhancing employees' belief in their conjoint capabilities, which can lead to improved outcomes.

Our second contribution is to the AMO literature by using the AMO model on group level. The AMO model on team level helps to answer question like: What do teams experience being capable of?, What motivates them, and which tasks specifically do they find meaning in?, Which opportunities do they experience having? Even though AMO model proposes that all three variables are necessary for outcome achievement, our results indicate that when team is offered an opportunity (supportive supervision) and possesses abilities (proactive personality) the level of motivation (collective efficacy) is not as necessary as when the team lacks in abilities and opportunities. One explanation for this may be that when teams do not receive enough support and members are not proactive, the joint belief in their capabilities becomes a necessity for achieving higher levels of team innovation. After all, supervisor's support may be particularly important when combined with high proactive personality, which implies "a favourable" working environment, in which employees' motivation is not as necessary.

And finally, our third contribution is the use of emergent constructs at the individual level to achieve the outcome on team level. Morgeson and Hofmann (1999) suggested that emergent constructs (e.g. group personality) may originate from different sources but maintain similar meanings to their lower-level constructs. All three aggregate-level measures used in our study were aggregated to team level as the emergent constructs, and they all showed sufficient inter-member agreement, which justified the aggregation of ratings within units to the unit level (Chen et al., 2005). By detecting relatively high and

significant ICC(1) results for these measures further indicate that variability is smaller within teams than between teams.

4.2 Practical Implications

This study has also an important managerial implication. There is an agreement that a key organizational competitive advantage lies in its ability to adapt to challenges from business environment. Our study highlights the importance of addressing both individual and team contributions when managing team-level innovation. Specifically, our study suggests that team innovation is impacted by team characteristics and/or processes, individual personalities, and beliefs.

We argue that the AMO framework represents a further mechanism linking leadership practices and team innovation. For example, when levels of motivation are low, it is extremely important that teams are proactive and leaders provide support in order to achieve high levels of team innovation. Leaders can influence employees' motivation (efficacy beliefs) by communicating a high level of confidence in the team's ability to achieve ambitious collective goals and their confidence can have a contagious effect on members' own confidence (Podsakoff, MacKenzie, Moorman, & Fetter, 1990). Leaders also influence employees' abilities (proactive personality) by providing supportive environment for promotion of change and taking action to influence the environment and finally, leaders influence opportunities (supportive supervision), by showing concern for members' needs, which promotes a belief among team members that the leader will provide them with any support that they might need and strengthen team members' confidence in their conjoint capabilities (Schaubroeck, Lam, & Cha, 2007), which leads to improved outcomes.

The theoretical model we outline can help inform organizations and managers how to effectively recruit and train individual team members and teams as a whole in order to achieve higher levels of team innovation. According to our results, the level of collective efficacy had less effect on team innovation if teams perceived higher levels of supportive supervision and proactive personality. If teams had lower levels of motivation (individual perception of collective capabilities), ability (through proactive personality) and provided opportunity (supportive supervision) were more important for achieving higher levels of team innovation as they were when teams perceived lower levels of motivation. Therefore, increased attention needs to be paid to employees by recruiting innovative individuals and providing supportive environment where employees are motivated, able to seek continuous improvement, and search for innovative solutions to problems.

To achieve this, leaders should adopt transformational management style, the ability to get teams to want to change and increase the level of their proactive personality, which may function as the safety net for teams to think and behave innovatively. When teams achieve high levels of proactive personality, leaders give them more freedom to act on their terms and so they can create an environment with less regulations and policies from company's

side. Leaders can rely on "Deep Dive" process (Kelley, Littman, & Peters, 2001), which is a technique to rapidly engage a team into a situation for idea generation and is widely used for innovation in idea generation phase and product development or improvement.

4.3 Limitations and future research directions

Although the present study makes several noteworthy contributions, it is important to point out also some of the limitations and discuss how they might spur future research. One of the biggest limitation of our paper are the cross-sectional data as they were collected by studying individuals and teams at the same point of time without regard to differences in time and we have non-experimental data therefore we can not make casual claims (Antonakis, Bendahan, Jacquart, & Lalive, 2010). Furthermore, although we have empirically tested and cited several studies that support hypotheses in our model throughout the paper, the results should be viewed with caution in light of the smaller sample size. Therefore, feasibility of the model and its ability to complement and extend existing theories should be tested in a large-scale study also in countries outside Europe. It is important to now go further; as such research would additionally extend our knowledge about the innovative process.

Whereas the case can be made that the team- and individual-focused inputs examined here (i.e., efficacy beliefs, proactive personality and supportive supervision) have an important impact on team innovation, we recognize that other antecedents, which we did not include in our study could also account for innovative performance at team level. For example, we did not assess other personal characteristics (e.g. intuition, need for cognition) and team-level factors that might affect this relationship (e.g. team-level leader-members exchange, influence tactics, psychological safety). Thus, more research is needed to build on our initial model of multilevel innovation processes in teams, and consider additional factors that promote innovativeness across levels of analysis.

5 CONCLUSION

Despite these limitations, there are important aspects in the present study for researchers as well as practitioners working in the field of innovation. In our study, we applied a multilevel approach in an attempt to take initial steps in advancing a more complete view of team innovation that encompassed emergent influences of individual members on their teams. Efficacy beliefs were associated with team innovative behavior by influencing employees' motivation to engage in such behaviors, as they capture confidence to generate and implement new ideas. We took this analysis a step further by taking into account how this relationship might be moderated by proactive personality and supportive supervision as they encourage team members to take initiative and to focus on exploratory thinking and so it enables a working environment where risk-taking approaches are valued and innovation is given a high priority. Our findings are consistent with the idea that efficacy beliefs stimulate team innovation and the level of collective efficacy had less effect on

team innovation if teams perceived higher levels of supportive supervision and proactive personality. We hope this effort will encourage future multilevel research related to team innovation.

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THE DRIVERS OF SUCCESS IN BUSINESS MODEL TRANSFORMATION

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ABSTRACT: *Existing empirical literature on business models is still inconclusive about the key drivers of successful business model transformation. The paper explores this issue by using a single longitudinal case study design in combination with grounded theory approach on a medium-sized, high-tech and globally oriented company. Based on on-site visits, interviews and secondary documentation data analysis, the study identifies six generic drivers of successful business model transformation: transformational leadership, discovery driven decision-making, industry improvement – customer specific orientation, content-oriented communication, self-initiative collaborators, and phased separation strategy. The new drivers supplement our existing knowledge on how successful transformation takes place and add to existing drivers, while extensive discussion of their implications may help the managers to execute business transformations more effectively.*

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INTRODUCTION

The question of how to transform a business model to spur technology improvements within an existing and highly profitable business model has not yet been addressed. Existing empirical research on internal drivers of business model transformation (hereafter BMT) focuses on the process of experimentation (Achtenhagen, Melin, & Naldi, 2013; McGrath, 2010; Sosna et al., 2010), leadership characteristics (Doz & Kosonen, 2010; Foss & Stieglitz, 2014), and capabilities of managing two business models simultaneously (Casadesus-Masanell & Tarzijan, 2012; Khanagha et al., 2014). Understanding what drives successful BMT is especially important in strategic alliances where small and medium hi-tech companies with innovative technologies complement their capabilities with those of their strategic partners (Medcof, 1997). While such partnerships can be highly profitable, partners might unilaterally embark on a transformation, which is not driven by the desire to have greater profit but to maximize their technological potential. Little is known

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about what makes BMT successful or not, especially over time. Moreover, a systematic examination of the relevant drivers of BMT and the kinds of change they cause is missing from existing business model literature (Saebi, 2014). Although many researchers have been exploring the process of business model innovation, the less innovative but highly demanding process of BMT is still largely under-researched, especially in long-term partnerships. Current research gives primacy to the external context as the driver of business model change with little empirical evidence on key internal drivers and their interdependencies (Martins, Rindova, & Greenbaum, 2015).

The objective of our study was to explore the key drivers of successful BMT. The main research question was: '*What are the key drivers of successful business model transformation?*' To explore the research question, we developed a longitudinal single-case study design based on an inductive field study of a globally oriented high-tech company. This paper contributes to the knowledge on business model dynamics by addressing the issue at hand from a long-term perspective. Based on information gathered from multiple sources, we identified six drivers of successful BMT. Thus, our paper advances the theory of business model change/transformation. We conclude the paper by discussing our findings and highlighting their implications for managers and academics.

1 LITERATURE REVIEW

A general consensus exists that a business model is oriented towards creating and delivering value to customers (Demil, Lecocq, Ricart, & Zott, 2015), and capturing value for the organization (Massa & Tucci, 2014). Business model change is the process by which the management deliberately and actively (Doz & Kosonen, 2010) alters established intra-organizational and/or extra-organizational systems of activities and their relations to environmental changes (Bucherer, Eisert, & Gassmann, 2012), and is mainly launched by reacting to technological and market-related forces (George & Bock, 2011) and by refocusing from an organization-centric to customer-centric business model (McGrath, 2010).

In the lifetime of a company, the initial design of its very first business model is based on a variety of external and internal factors (George & Bock, 2011); however, the ongoing search for a better competitive position often forces companies to change this model (Chesbrough & Rosenbloom, 2002; Markides & Sosa, 2013). There are three theoretical perspectives on business model change: (1) rational positioning view, which represents a search for a new optimal design that repositions the firm in response to any kind of significant changes in its environment; (2) the evolutionary view, which sees business model development as an initial experiment followed by constant fine-tuning and learning, and (3) the cognitive view, which advocates that business model change is a consequence of managerial mental models, which accrue due to changes in the environment. These perspectives emphasise the external context as a driver of business model change and offer limited insight into the internal drivers of successful business model change (Martins et al., 2015).

While there are different interpretations of business model change (Aspara, Lamberg, Laukia, & Tikkanen, 2013; Doz & Kosonen, 2010; Markides, 2013; Massa & Tucci, 2014; Sosna et al., 2010), authors agree that business model change is likely an ongoing process (Casadesus-Masanell & Ricart, 2011; Khanagha, Volberda & Oshri, 2014) partly characterised by demanding (Aspara et al., 2013; Sosna et al., 2010) and partly by fine-tuning changes (Cavalcante et al., 2011). Business model change activities can range from incremental changes in individual components of business models right through to innovative disruption of core elements of a firm and its business logic (Bucherer et al., 2012). To differentiate business model innovation from other types of business model change, we followed the concepts defined by Massa and Tucci (2014). Business model design relates to newly formed firms and business model reconfiguration to established ones. Along with business model innovation, these two concepts are part of the business model change concept; similarly, business model innovation is part of a broader concept of BMT.

The capabilities required to successfully utilise different types of business model change include evolutionary, innovative, and adaptive change capabilities (Saebi, 2014). BMT combines adaptive change capabilities and directed transformation to respond to technological changes (Khanagha et al., 2014).

When dealing with two competing business models, which seems to be the dominant approach in managerial practice (Bucherer et al., 2012), there is a need for recursive iterations between different modes of separated and integrated structures in line with the emergent nature of strategic intent toward the new business model (Khanagha et al., 2014). To manage two business models simultaneously, a company has to design a context allowing it to achieve a delicate balance. On one hand, it has to create enough distance between the two business models so that they do not suffocate each other, and on the other hand, it has to keep them close enough to exploit synergies between the two (Markides & Sosa, 2013). Working with a new business model requires experimentation and divergent thinking that can be better achieved by flexible and decentralized structures; in addition, continuing with the existing business model requires focus and is better accomplished via efficient and centralized structures (Khanagha et al., 2014).

In the **experimentation research stream,** creating, identifying and experimenting with new business opportunities has been confirmed as a critical capability in a longitudinal study of 25 small and medium-sized firms (Achtenhagen et al., 2013). The study showed that highly entrepreneurial experimenting is related to market research, new ideas and accepting failures—these were treated as a basis for learning. It has been shown that organizations learn more from failures than successes and that knowledge from failures depreciates more slowly that knowledge from successes (Madsen & Desai, 2010). The acquired knowledge from experimenting subsequently allows exploring alternative approaches to value creation (Sinfield, Calder, McConnell, & Colson, 2012) and successful business model development (Sosna et al., 2010). Focused commitment to one single business model in combination with simultaneous experimentation can influence the long-term survival of ventures operating in uncertainty (Andries, Debackere, & Looy, 2013).

In the **leadership research stream**, the founder's vision has been found to importantly influence business model development and change (Chesbrough & Rosenbloom, 2002). Strategic sensitivity, which includes sharpening foresight in seeing the needs for a BMT, has been suggested as leadership meta-capability (Doz & Kosonen, 2010). In addition to achieving coherence between active and clear leadership, a strong organisational culture and employee commitment have also been recognized as a critical capability (Achtenhagen et al., 2013). Four roles (monitor, sponsor, moderator, and architect role) of top management in leading business model change are proposed regarding the intensity of the business model change (Foss & Stieglitz, 2014).

Due to technology development, many companies are forced to run two business models simultaneously. In the **managing two business models simultaneously research stream,** researchers find that companies can run two business models also when they see the opportunities of serving two different customer segments. In such cases, business models can complement each other, for example in the case of LAN airlines (Casadesus-Masanell & Tarzijan, 2012). Four possible strategies for managing dual business strategies are proposed (Markides, 2013); however, complete separation has not been found as the optimal structural approach for dealing with two competing business models (Khanagha et al., 2014). The need for recursive iteration between different modes of separated and integrated structures in line with the emergent nature of strategic intent toward the new business model was highlighted.

The **collaboration with customers research stream** underlined the need for rethinking the generation of ideas and bringing them to the market. This led to the concept of open innovation and open business models (Chesbrough, 2003) with nine different research streams of which the user perspective is one of the best-researched fields (Gassmann, Enkel, & Chesbrough, 2010). The bibliometric review of the concept of open innovation reveals that it is mainly, but not exclusively, rooted in technology and innovation management literature, with a strong focus on the user-centric perspective (Kovacs, van Looy, & Cassiman, 2015). For example, the exploratory study of 605 innovative SMEs in the Netherlands highlighted that they are practicing open innovation activities extensively and increasingly. Open innovation in these firms was operationalised in the field of technology exploitation and technology exploration (van den Vrande, de Jong, Vanhaverbeke, & de Rochemont, 2009). A study among contributors of freely submitted designs for a jewellery company highlighted the importance of co-creation and its impact on the quantity and quality of designs submitted (Füller, Hutter, & Faullant, 2011).

Previous studies do not provide evidence of a business model change taking place in the strategic alliance separation of a medium sized high-tech company. Leadership focus studies have a limited range (Foss & Stieglitz, 2014) and do not reveal the kinds of leadership style (Yukl, 2010) appropriate in an alliance-related BMT. Often, the focus tends to be on structural solutions while other elements rounding up the company's organisational context, such as values, vision, incentives, people and culture, are underexplored. Whether cooperation with customers in such a delicate situation has a significant impact on the success of a business model transformation has yet to be investigated.

2 METHODOLOGY

A qualitative research approach with two commonly used methods for inductive research was applied: (1) single case study, justifiable when the research of a topic is at its early stage (Eisenhardt, 1989), is representative, and serves a revelatory and longitudinal purpose (Yin, 2009); and (2) the grounded theory methodology (Glaser & Holton, 2004) in order to assure qualitative rigour in conducting the research (Gioia, Corley, & Hamilton, 2012). We adopted the stance of "theoretical agnosticism" (Charmaz, 2006).

2.1 Case description

The case study involves a medium sized and innovative hi-tech company Dewesoft, which changed its business model to ensure the maximization of its technological potential. In fact, its potential was locked and under-exploited under the first business model when the company was strategically aligned with its Austrian partner. This case is unique in that no other cases known in literature dealing with BMT simultaneously involve strategic alliance separation; therefore, the decision for the single case was justified. During the BMT period from a strategically aligned DAQ SW company to an independent total solution company, Dewesoft established its own global sales network in 38 countries and introduced over 45 innovative DAQ HW measurement instruments perfectly fitted with their own DAQ SW to the market. It completely changed its sales model, a fact reflected by the total turnover achieved at the end of 2014 (€10.7M), which is 7.64 times more compared to the turnover at the end of 2007 (€1.4M). In addition, the company raised the employee added value from €98,800 (2007) to €150,800 (2014), even though the average number of employees in the Slovenian head office increased from 9.6 to 38.3.

2.2 Data collection

Data collection included multiple sources of primary and secondary data in three research sequences (for details on research sequences, see Appendix 1). In the first research sequence, we used three unstructured interviews consisting of an opening question and followed by probe questions which focused on the company's early development stages and BMT perceptions. Interviews were complemented with an on-site visit and informal discussions. Because the BMT was still in progress, we recognised that interviewing only executives and having no access to internal documentation may not yield entirely accurate data. Comprehensive external documentation examinations were carried out between the first and the second data research sequences, and primary data was also collected. This allowed us to draft the first BMT process and its key drivers. Publicly available external documentation included newspaper articles (interviews and company presentation), media accounts (TV), strategic partner's annual reports, secondary survey data from the project Gazele, graduation theses of Dewesoft's employees, and the financial database Gvin.

After a period of establishing trust, Dewesoft's CEO and CTO expressed a willingness to disclose their internal archives. The second research sequence included additional two interviews with executives, a review of internal documentation (business reports, financial reports, company's presentations, e-mail correspondences, operational guidelines, catalogues, company website, and company video and photo materials). In addition, three informal conversations with executives were carried out.

The second draft of BMT with tentative drivers of success, produced at the end of second research sequence, encouraged the company's CEO and CTO to 'open the door' to other informants, allowing us to broaden our social interactions. In the third research sequence, 18 semi-structured interviews with four groups of other informants (cofounders, experienced engineers, employees, and partners) were conducted, lasting from 30 up to 60 minutes each. They were transcribed on the same day. Except for interviews with partners which were performed at their locations, all interviews were conducted at Dewesoft's head office. We were also invited to four company meetings; in addition, we had four informal conversations and were engaged in informal social gatherings relevant to our research question. Altogether, more than 200 pages of transcripts were accumulated. The time period for internal sources used was 2003-2014, and for external sources it was 2001-2014. All interviewees were aware of our role in the study and voluntarily agreed to participate in it.

2.3 Data Analysis

The analysis was structured following continuous interplay between data collection and analysis and permitted us to follow the leads that emerged (Charmaz, 2006). In the first data collection period, we familiarised ourselves with the data collected, then analysed interview transcripts and investigated the data from on-site visits and informal conversations to highlight any inconsistencies requiring further examination (Eisenhardt, 1989). With an early analysis, we coded the data to summarize, interpret, and classify information (Miles & Huberman, 1994). The main topics covered were identified and resulted in 291 insights emerging from transcription. Also, a common set of terms was determined, resulting in 29 broad categories that were further analysed for similarities and shared characteristics, ultimately leading to the generation of 6 main categories which served as constituent parts of the first tentative model of key drivers of successful BMT. The coding process was exploratory, relying on informants' wording.

In the second research sequence, we transcribed and coded—independently from the previous findings—a new set of interview data, personal observations, and excerpts of internal documents. This resulted in 140 insights, which emerged from the transcription. Another feature of this sequence was that we presented the first tentative model of key drivers of successful BMT to the executives after conducting interviews with them. The model was formulated based on the findings of the first research sequence. In the ensuing discussion, 3 major research categories out of the proposed 6 were confirmed as suitable work concepts. The tentative work model was created without analysing internal company

documentation because we only obtained access to it in the second research sequence. This means that we relied on cross-period analysis in which the insights from the first research sequence were compared to the insights from the second one. This resulted in additional vital information that enabled us to understand the broadest context of the company's operation. By identifying patterns and their connections, and exposing illustrative quotations and thoughts, we condensed the information into 5 tentative drivers by the end the second research sequence. The drivers were presented to executives and confirmed by them.

By the end of the third research period, a wealth of new data and input into the course and consequences of BMT was made available for research, so we decided to once again recode all the available information. The new coding yielded a total of 322 content codes. An ensuing process of finding interconnections between content blocks produced 17 sub-categories that were streamlined into 6 main categories.

3 RESULTS

Figure 1 presents the structure of data after the third research sequence. Illustrative content codes are shown with two items for each sub-category (see Appendices 2 and 3 for the coding sample and a range of illustrative quotes and observations). The formulation of main categories is outlined in Table 1.

Figure 1: *Data Structure after the Third Research Sequence*

Table 1: *Drivers of BMT and their subcategories*

Transformational leadership • *Technology vision:* Long-term understanding of the direction of the company's technological development and the ability to transfer this vision to all involved parties. • *High quality focus:* A focus on creating above-average products and innovative services that exceed the expectations of the consumer. • *World view:* Fundamental philosophical orientation of the company that guides the pace, course and intensity of its business operations.
Discovery driven decision-making • *Effectuating / experimenting:* The constant development and execution of new modes of operation with the intent of acquiring experience and information for the purpose of successful decision-making. • *Agile deciding:* Ability to adopt BMT decisions that are of current strategic importance to the company.
Industry improvement - customer specific orientation • *Customer value proposition:* Clever way of offering added value to end users. • *Customer – co-creation:* Encouraging the active cooperation of customers and partners in the process of constant product improvement, so that end users (and sales agents) have a say in how technological solutions are designed. • *Industry value sharing:* Ensuring that solutions developed for specific purposes are then accessible to everyone.
Self-initiative collaborators • *Engagement:* Selection and development of personnel that proactively strives to realize the company's technology vision, on the individual as well as team levels. • *Internal knowledge sharing:* It is of key importance to create an atmosphere that encourages each individual to contribute their maximum share to the realization of common goals and stress the importance of everyone's involvement. • *Fast and innovative development:* The ability to perform fast and innovative development is tied to the upgrading of existing products and the utilization of a broad mix of industry knowledge and expertise.
Content-Oriented Communication • *Customer-focused communication:* Using effective means to inform customers continuously and at the right moments about possibilities for future development. • *Sales partners-focused communication:* Ensuring conditions for the establishment of an effective network of sales partners willing to work with a young company on the rise.
Phased Separation Strategy • *Sensing:* Executives carefully observe all the moves and decisions conducted by the former strategic partner and regularly adopt counter-measures. • *Making distinction:* Ability to differentiate the company from the former strategic partner, coupled with the audacity to compete on the same market. • *Development of missing capabilities:* Capabilities that were assured by the former strategic partner had to be developed. • *Ambidexterity:* Ability to share resources between the old and new business models during the period of transformation.

3.1 Transformational leadership

A number of statements emphasise that the CTO Jure Knez is the undisputed leader of the company and that his personal example propelled the realization of the enterprise's technological vision and guided employees throughout the course of BMT. A perceived danger to the realization of the technology vision was in fact one of the key causes for the necessity of BMT, and the leadership's ability to openly communicate its perspective and work hand in hand with employees was one of its key facilitators. The company cofounder stated in his interview: "We're tremendously fortunate to have the opportunity of working with Jure, as he's someone that will go above and beyond his duties to make sure we stay on top". The realization of the technology vision went in harmony with a focus on the gradual but persistent achievement of state-of-the-art quality and product performance. One example is their software for the acquiring, processing and display of data, which is still the same core product it had been at the company's establishment, and one they are constantly updating. An important element of the leadership charisma was the CTO's particular world view, which is well illustrated by his answer to a journalist, asking how he sees the individual's ability to change the world: "Being small compared to the rest of the world isn't an excuse to stay passive. Everyone should do their best to pitch in, help out and make the world a better place, then it all adds up."

3.2 Discovery driven decision-making

Participants in our research believe that their willingness to accept risk and experiment with business practices and technological innovation was essential for the success of BMT. The research further established that the executives did not know how it would look and function once transformation was complete. Many decisions were made on the basis of "as-you-go" information and understanding developed from experimenting and the will to pursue ideas. Experimenting comes with unexpected outcomes but results in useful experience both ways, and interviewees shared a belief in leadership that embraces the possibility of negative outcome. *"Even today, we can't say for sure we'll be staying afloat, but the environment changes all the time anyway. It's a sin not to try new things, don't you think?"* There is another case, which shows the willingness for experimenting. Dewesoft tried their hand at online sales, which proved to be far less successful than they had envisioned. One executive commented: *"When we looked at the success of our internet sales, we were forced to admit they were a failure. And we had to cancel them, sure. But it all ended up being the first step on our way to independence."* Each of the company's experiments was followed by an analysis of its effects and the adoption of new decisions, which normally ended up being of strategic importance to the company and carried over to the transformation of the strategic model. Thus, failure to reach good sales online helped leadership decide to establish the company's own sales office in Austria.

3.3 Industry improvement - customer specific orientation

On the basis of all the evidence acquired in the interviews, observations and analysis of company documentation, we established that the company is not only focused on creating added value for their customers, but is also extremely willing to listen to their feedback and incorporate it into solutions which then manage to push technological boundaries. Looking at the information we acquired, it is accurate to state that the company created the added value on the basis of technological perfectionism and innovation, pricing policy, a free-of-charge bundle of extra services that provided customers with updates, maintenance and technological upgrades distributed to everyone, as well as a free software package for the analysis and display of data once it was captured by the Dewesoft measurement software. Co-creation with their customers in the development of solutions had always been their trait, but prior to strategic separation, they did not have direct enough access to the customers to perform it to a satisfactory degree. During the BMT, Dewesoft turned what seemed like a shortcoming into an advantage.

The company's accessible and responsive orientation was also confirmed by one of the customers, who said: *"Dewesoft reacted right away to our particular needs, and the other makers didn't, so it became a pretty easy choice looking forward ... and that's why we chose them.*" Based on the collected information, we were also able to ascertain that their next dimension of industry improvement—customer specific orientation—is aimed at the development of industry-wide solutions that push the technology forward for all users, promoting fundamental development. Cutting-edge design rests on systematic technological development, coupled with a broad understanding of end-user issues and expectations as well as a close understanding of the industry as a whole, through cooperation with top experts in the field of automotive, aircraft, space and power technology fields. As the CEO said: … *"It was shocking to find out even NASA was prepared to let us make the products we developed specifically for them available to everyone else. We don't believe in exclusivity in science. Everything we ever developed became an update to our core software. 15 year later, we still keep upgrading the same one. And all the improvements are public, freely available to anyone who ever purchased our product.*" The approach that adds all customer-specific solutions to the core software package used by everyone makes it incrementally more capable and reliable, in turn attracting a wider and wider circle of customers.

3.4 Self-Initiative Collaborators

The entrepreneurship logic of Dewesoft is characterized by the significant autonomy of each employee, coupled with extensive encouragement of proactive contribution to the company's goals on both the individual as well as team levels. On the other hand, the ability to co-create applicative research for major global companies provides a high degree of personal motivation to ambitious young engineers, who are eager to excel and prove their professional worth, or as one of them said: *"When I was at the fair and saw just how much famous companies value Dewesoft's solutions, it made me rethink my work ethic, and*

since then I want to do my best even if I have to be here all day..." The willingness to actively share personal expertise is also one of the most outstanding personal traits of the CTO, and this attitude is carried over to those working in the same environment. Dewesoft leadership offers guidance to personnel and expects them to share knowledge between one another, creating a culture of learning not only in the company's internal dealings but also in its relationship with customers and suppliers. The value of knowledge exchange is confirmed by numerous interviewee statements: "*The first thing we teach our employees is how to fly by themselves, and if they need directions, they can ask,*" as the CTO stated. One employee confirmed this sentiment by saying: "*I really appreciate that everybody was willing to help me when I started working for the company*", while another told: "*Since I was employed here, I feel like my mentor gave me so much experience...*"

3.5 Content-Oriented Communication

Focus on strategic, planned, diverse and constant communication with customers and sales network partners was seen as another vital factor in the success of Dewesoft's BMT, according to the gathered information. A new period in communication began in early 2008 with the website redesign and the promotion of the company's first independent measurement instrument, which received the Nasa Tech Briefs prestigious Product of the Year 2009 award. That year, the company also opened its sales office in Austria and one of the cofounders remembers: "*In 2009 we published our first catalogue which featured just a few HW pieces, but it was a necessary start to approaching the customers and sales networks*".

All these activities served to inform the customers, and some were also aimed at reinsuring them that Dewesoft was able to independently develop capable non-competing instruments which it was offering at the time. Once it was made clear that complete separation from the former strategic partner was unavoidable, the approach to communication with customers and the sales network was refocused on Dewesoft as an independent provider of quality hardware in combination with excellent SW for turn-key, easy-to-use measuring solutions.

Dewesoft also began organizing regular measurement conferences (taking place in 2011, 2013 and 2015) at the location of the company's head office where they invited their customers and business partners. The primary purpose of these conferences was to present new products and improvements, exchange experience and transfer expertise, in addition to reinforcing the status of a company that was growing and stable in the long-term in spite of its on-going separation from the strategic partner. Measuring conferences also provided the opportunity to directly showcase the company's research and development facilities, including remote ones, as one of the executives commented: "*Buyers already visited us here on the hill where we make aluminium casings, and they can see first-hand it's not a cheap product but rock solid*". Throughout this stage of model transformation, communication was supported by sales engineering and regular participation in established international trade and industry fairs, alongside the extensive dissemination of information via the company's website and digital channels.

3.6 Phased Separation Strategy

When one side in strategic partnerships feels the deal is no longer working in its favour, it will attempt to rearrange the cooperation conditions or cease partnership. In the latter case, the process of separation is a delicate one since partners have a limited time window to organize any capabilities they are now missing, and prove to customers that they are still worthy of trust even when operating as independent entities. In this context, respondents stated that the accurate interpretation and assessment of the business behaviour of the former partner was crucial in the process of decision-making and market positioning, as both executives agreed. The one of them stated: *"We realized that our strategic partner was looking for ways to become more independent from Dewesoft, and that meant we had to become more independent, too. That was the breaking point in our cooperation."*

Knowing that they will compete on the same market, and initially for the same exact customers, Dewesoft chose to first offer similar products based on different technology, which were not directly competing with the range offered by the former partner, as illustrated by the following statement of the CEO: *"When we started making instruments, we said we'd make something they don't carry, so there would be no hard feelings."* When Dewesoft finally started competing with its former ally, it did not try to dump prices but instead offered superior products at the same price. The company's capacity for rapid development then allowed it to quickly position itself in those technology fields that were still unoccupied by the former partner. As one senior engineer said: *"We're quite good when it comes to data acquisition, we have a lot of range there, and now we want to explore the controller side, data output. A completely new field that would really set us apart from our previous ally."*

In a strategic partnership, the most suitable strategy is agreement on a period of continued cooperation. Judging by the respondents' statements, we were able to conclude the company first secured all the personnel deemed necessary for technologic development, and then focused on the establishment of its own sales framework. One of the cofounders stated the following: *"Our next step was how to persuade and motivate the sales channels in the network of our ex strategic partner to start selling our hardware, initially still under the same name as before and then soon under the Dewesoft brand."*

To manage two business models simultaneously, the firm has to design a context that will allow it to achieve a delicate balance. In the case of Dewesoft, we recognised a slightly different approach. During the BMT, they used the new business model more and more; however, they never ceased using the first model for two pragmatic reasons. The first is that customers who use the product from the first business model could become their first tier customers in the future, and the second is that the revenue stream of the first business model was still substantial.

4 DISCUSSION

This exploratory research resulted in 6 drivers of successful BMT and 17 sub-categories. *Transformational Leadership*. Leadership theory affirms that there are two distinct but interrelated types of leadership: transactional and transformational (Yukl, 2010). Our study found that executives are the leading force of BMT, especially the CTO of the company and the main shareholder, who never works from a position of authority. They inspired co-workers or *"members of the team"*, as the CTO always expressed himself during interviews, and motivated them by personal behaviour, learning abilities and technological professionalism. Researchers in previous studies have not defined what types of leaders have led BMT, with few exceptions. Sosna et al. (2010) identified that the exploratory phase of the transformation of the business model was "strongly influenced" by the entrepreneur or owner-manager who was the main decision-maker and "was encouraging his team to learn and experiment by sharing information and was involving them in decision making", which are all elements of transformational leadership.

Discovery Driven Decision-Making. In highly uncertain, complex and fast-moving environments, experimentation and, consequently, evolutionary learning are the "tools of choice" for how to discover the most effective business model, since they cannot be fully anticipated in advance (McGrath, 2010). Our study found that the business model was not exactly innovative and new to this world, but it was highly new to the firm. The research also confirmed that experimentation and effectuation was a "state of mind" in the company for learning and gaining relevant experience on how to adjust different aspects of the company to the emerging business model. We found that the researched company performed experiments and effectuation in very different fields, such as technology (new instruments), acquisition (an offer to buy the strategic partner), market access (web sales), human resource motivation (an incentive scheme) or even at the level of product name development. Not all experiments were successful (web sales, acquisition); however, within the company they were treated as failures rather than mistakes (Sosna et al., 2010). In our study, we found a close connection between discovering and deciding or taking action (Casadesus-Masanel & Ricart, 2011), such as: success with the first instrument (experiment) led to global web sales (decision); global web sales failure (experiment) led to opening the first sales office abroad (decision); acquisition of strategic partner failed (experiment), which led to a stronger HW development team in the company (decision). *Industry Improvement - Customer Specific Orientation*. Our study's findings confirm that Dewesoft's customer value proposition was changed, adapted and improved during the process of BMT. It was especially important because Dewesoft was co-creating solutions with the customers who were simultaneously customers of their previous strategic partner. Dewesoft did not strive just to maximize shareholder wealth; in fact, it was just the opposite: they strove to find ways of maximising the use of technology which was locked into the initial business model and to develop new types of measuring instruments and solutions, all in line with their "world view". They made sure that all users who already bought a licence, and with it access to the latest technology, had free access to the SW solutions developed for any specific customers. That means that all Dewesoft's customers who work in a "virtual network", unintentionally, but on the other hand consciously and with

formal consent, help each other and share best practices and knowledge, which embodies Dewesoft's capabilities in its products. With such an approach, all customers from the same industry benefit and improvements quickly move the boundaries of an industry's capabilities far ahead. Such cooperation is understood as an extension of customer value co-creation, where a supplier-customer relation is in the foreground (Galvagno & Dalli, 2014), compared to our findings, which put in the foreground the supplier–customer–industry relation. Such an approach is in line with calls for "creating shared values", as in the case of Nike (Epstein, Buhovac, & Yuthas, 2010).

Phased Separation Strategy. Our study results confirmed that making a distinction between companies was an important characteristic of a phased separation strategy. A company should implement distinction in accordance with careful sensing and evaluating partner moves in the strategic alliance separation process (Peng & Shenkar, 2002). If both partners compete on the same market for the same customers, this is an even more sensible process. In our case, there was a very unique situation because Dewesoft was developing a new business model and simultaneously running the old one. That is a common situation when both partners depend on each other because they serve the same customers, and, during the separation process, assure relevant capabilities which are no more accessible from the previous partner. During the BMT, Dewesoft was in a position to run its first business model: selling its own SW solution to the strategic partner. Simultaneously, they started running another business model in which they were selling, at the beginning, their HW solutions via the partner's sales network to the end users. The same approach was later adopted with selling complete solutions via their own sales network while keeping the original business model active the entire time. Spatial separation (Markides, 2013) of business models is not relevant in cases where the resources and capabilities needed to run both business model can synergize each other.

Besides confirming four already recognized drivers, our study revealed two additional BMT-related drivers which surfaced during the strategic alliance separation. The first one is *self-initiative collaborators.* BMT requires high flexibility not only among management but also among employees (Cummings & Worley, 2009), who should be self-motivated to change (Prahalad & Ramaswamy, 2000). Various study results suggest that distrust often motivates employees to hide knowledge from their colleagues (Connelly, Zweig, Webster, & Trougakos, 2012), which was not the case in our research. We found that a high degree of trust among employees correlated with transformational leadership, which resulted in employee participation in the internal transfer of knowledge, and in fast and innovative development and upgrade of existing solutions. An even greater challenge in organizations is how to prepare employees not only to change and adapt to the new business model, but also to encourage their creativity and active involvement during its transformation. A number of studies have investigated the relationship between leadership style and employee creativity (Amabile, Schatzel, Moneta, & Kramer, 2004; Zhang & Bartol, 2010). Both characteristics were influenced by the technological vision of the company and the capabilities of its employees, while taking into account the situational characteristics in the relationship with its strategic partner (agreed limited time frame for achieving product comparability) presented a huge challenge.

According to Biggemann's case study, information sharing plays an essential role in relationship development among business partners (Biggemann, 2012), and *content-oriented communication* is another driver which was revealed in our study. The importance of communication in the opposite situation is noted by Epstein in a study of drivers of successful post-merger integration (Epstein, 2004). Among the five drivers which Epstein recognised, a strong emphasis is placed on communication. We found a similar situation in our study, keeping in mind that the companies did not merge, but rather diverge. The executives at Dewesoft were aware that planned communication was vital to build trust for further continuous cooperation with the customers. During the process of dissolving the strategic partnership, they strengthened the relationship with the customers in such a way to ensure trust and long-term predictability related to future development, which was achieved by a multi-channel approach. For example: they implemented internal measuring conferences at the company's location, performed customer visits, were in online contact, attended international conferences, and implemented an online learning platform. A similar approach was established with the distributors' network, which did not exist under the name Dewesoft until mid-2010 when the first distributor was established.

5 CONCLUSION

Based on case study results, this paper aims to contribute to the understanding of critical drivers for successful BMT and to the knowledge of business models and their successful transformation. Moreover, it aims to supplement the set of clarified drivers of successful BMT. It also provides confirmation that previously recognized drivers are valid in the context of strategic alliance separation.

From the managerial perspective, it is important to understand that while transformational leadership has a pivotal role in the process of BMT, one should not neglect the role of other drivers which are considered to intermediate between transformational leadership and phased separation strategy. Since the final outcome of BMT is highly unpredictable, organisations have to be willing to discover new possibilities of doing business while effectively running the existing business. This is especially challenging when the organization carries out the BMT and, at the same time, separates itself from a long-term strategic partner to operate in the same market for the same customers. In such a situation, BMT should lead the organisation to position itself uniquely and be ready to explore the opportunities in different, not just technological directions. Thus, the information obtained from discovery driven experimentation is vital for the adoption of strategic decisions of top management.

Openness to exploring should not only be limited to top management, as it is also crucial in the technological sense because it encourages all employees to continuously discover new possibilities for further technological development and distinction from the former partner. If non-technological experimentation is associated with the question of how to enter the market and be different from competitors, technological experimentation should prompt cooperation with customers. For the establishment of such cooperation,

it is essential that there is some collaboration even before the introduction of BMT and that customers already have positive experience with it. Therefore, content-oriented communication is crucial to achieve customers' confidence in cooperation and at the same time confidence in the longevity and reliability of co-created solutions. It is important that the substantive communication is multi-layered and includes technologically modern channels of communication, in addition to standard communication forms. Involving customers in the creation of solutions and also sharing these solutions between all existing customers is one of the most important building blocks of creating a relationship with the company and the willingness to walk together along an unknown route during the BMT.

An extremely important dimension of BMT are employees who should not only be willing to follow the management's vision, but wish to proactively co-create transformation. In the researched company, it turned out that one of the main features of employees during the BMT was their readiness for learning and disseminating the knowledge and experience acquired. Without top managers and employees in key positions who demonstrated both personal characteristics—that is, acquiring and disseminating knowledge—BMT would hardly be likely.

An exploratory study has, in its nature, a number of limitations. We conducted research on a unique single case, which limits the observed variability and decreases the external validity. We are unable to generalize the findings to other types of companies because the business model under investigation relates to a medium-sized and innovative globally-oriented high-tech company. On the other hand, case studies are generalizable to theoretical propositions (Yin, 2003). This is the first study, to our knowledge, which research a BMT during the process of strategic alliance separation and we hope that our work will lead to more theory driven research. Another limitation is that the research was performed by a single investigator, which did not allow for investigator triangulation. To avoid subjective interpretation of the collected data, we regularly checked our findings with the key informants after each research sequence.

Careful examination of the business model suggests that this topic is in its early stages of development. Here, we provide suggestions on where the priorities for future model development might lie. The drivers we discovered are contextually conditioned, meaning there is a realistic possibility that other drivers in another research context exist, which could have a profound influence on successful BMT. Future research in another organizational setting may enrich the set of identified drivers. The characteristics of the identified drivers could be enlarged by research in other types of organizations. Based on the identified drivers, a multi-case study would be a great opportunity to check and confirm the replicability of the proposed drivers of successful BMT.

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Appendix 1: *Research sequences and guiding research questions*

Research sequence 1 September 2013 – April 2014	**Research sequence 2** June 2014 – November 2014	**Research sequence 3** November 2014 – June 2015
Guiding research questions in the first research sequence • What was the course of your BMT from the time of your company's establishment up until now? • Why did you decide to transform your business model and in what ways did you achieve this task? • What were the characteristics of the BMT process?	**Guiding research questions in the second research sequence** • Do the interviews and their data describe the process of BMT to a sufficient degree? • Have we missed any significant factors or events that also affected the process of the model's transformation? • Which changes occurred during the past 8 months of BMT (9/2013 – 6/2014)? • Which changes occurred during the past 4 months of BMT (8/2014 – 11/2014)?	**Guiding research questions in the third research sequence** • How was the development and transformation of the Dewesoft business model perceived by the cofounders / senior engineers / employees / external partners of the company? • How do the cofounders / senior engineers / employees / external partners of the company interpret the key characteristics of their BMT?
Drivers of the tentative model 1 • Technology Vision • Industry Solution • Customer Co-creation • Experimenting • Collaboration with Cofounders • Scientific Orientation	**Drivers of the tentative model 2** • Technology Envisioning • Industry Improvement Solution • Customer Co-creation • Experimenting	**Drivers of the final model** • Transformational Leadership • Industry Improvement – Customer Specific Orientation • Discovery Driven Decision Making • Content-oriented Communication • Self-initiative Collaborators • Phased Separation Strategy
Data sources: • CTO and CEO, external documentation	**Data sources:** • CTO and CEO, external documentation, internal documentation	**Data sources:** • CTO and CEO, external documentation, internal documentation, other informants (cofounders, engineers, employers, partners)

Appendix 2: *Illustrative codes for one of the drivers (transformational leadership) at the end of the 3rd research sequence*

High quality focus	Technology vision	World view
1. Orientation towards top-quality products with global demand - G1.1	**1. Personal technology vision - G1.2**	**1. Employees own a stake in the company - G1.2**
2. Improving and speeding up procedures - G3.3	**2. Technological insight and understanding - G3.3**	**2. Jure has "a big heart" - G3.3**
3. Focus on technological perfection - G1.1, G1.2	3. Knowledge of potential technology development avenues - G1.1	3. Staying open to cooperation with external parties - G1.1
4. Focus on the constant updating of successful products - G1.1	4. 5-year plan of future technology development - G1.1	4. Maintaining a "go with the flow" business culture - G1.1
5. Understanding that gradual development is an essential part of creating stable platforms - G1.1	5. Guiding the technological development of customers, too - G1.1	5. Ensuring financial independence - G1.1
6. Optimum vs. maximum - G1.1	6. Technological management alongside technology vision - G1.1	6. Maintaining ownership independence - G1.1
7. Simple yet high performance products - G4.3	7. Strive to be "cutting edge" in the technology sense - G1.1	7. Applicative research entrepreneurship culture - G1.1
8. "Apple" quality - G4.3	8. Personal vision of company development - G1.2	8. Freedom to make decisions - G1.1
9. Cancelling projects or manufacture when quality is subpar - G4.3	9. Development of the vision in harmony with the needs of customers and the direction of the industry's trends - G3.3	9. Organic growth - G1.1
10. Awareness of things that need change and how to go about it - G4.3	10. New technology vision - G3.3	10. Co-operative and co-ownership models involving employees - G1.1
11. Looking two or even three steps ahead - G4.3	11. Cooperating in the vision's implementation - G3.3	11. Sensitivity to the progress of broader society - G1.1
12. Ability to maintain high productivity in stressful situations - G4.3	12. Global reach and availability - G3.3	12. Helping develop the industry - G1.1
13. Identifying and addressing any recurring errors in the work process - G4.3	13. Focus on the connection between SW and HW - G3.3	13. Avoiding the inverse effect of stagnant capital - G1.1
14. Making a truly valuable instrument - G5.3	14. Technology vision as a foundation of business transformation - G3.3	14. Fostering personal independence - G1.2
	15. Co-creating the company vision - G3.3	15. Research and applicative freedom - G1.2
	16. Vision that brings employees together - G3.3	16. Making money is not the primary focus - G1.2
	17. Jure's vision is our prime directive - G3.3	17. Technology-driven development - G1.2
	18. The power of technological aspirations - G5.3	18. Helping make the world a better place - G1.2
		19. Calm and respectful pose - G1.2
		20. Professional transformation - G2.3
		21. Separation but staying on good and productive terms - G2.3
		22. Personal respect and consideration - G3.3, G4.3

Legend: G1.1 – Interviews conducted with group G1 during the first research sequence; G1.2 – Interviews conducted with group G1 during the second research sequence; G3.3, G4.3, G5.3 – Interviews conducted with groups G3, G4 or G5 during the third research sequence.

Appendix 3: *Illustrative quotes, observations and excerpts for transformational leadership at the end of the 3rd research sequence*

	High Quality Focus	Technology Vision	World View
Interview – G1 only	***Orientation towards top end quality and globally useful products:*** *"Our motto was always to make one thing but make it incredibly well, then try to sell it in as many geographical regions and application fields as possible." G1.1*	***Personal technology vision:*** *"Our long-term plans are always, personally up to me. That's something I reserve for myself, it's just how it is. Back when we were aligned, I felt we lacked a solid long-term vision, in the sense of knowing exactly where we wanted to be, say, three years down the line. It's something that was missing." G1.2*	***Employee co-ownership:*** *"My goal is to run a company whose success benefits everyone involved, which means employees should have a stake in the company. I also want them to keep running the company when it's time for me to step back…" G1.2*
Interview – G2, G3, G4 or G5	***Make even better products even faster:*** *"It's an everyday thing for us, thinking how to increase the quality and pace of production. These two are constant questions." G3.3*	***Technological visionary:*** *"If I had to compare Jure to Franz and Herbert, I'd say the two of them are more like salesmen-entrepreneurs while he is more of a technological visionary." G3.3*	***Jure has "a big heart":*** *"Our CTO has tons of hands-on experience in addition to being well versed in theoretical concepts, and he's able to develop a clear vision for the future, like a Steve Jobs for example, only that Jure has a really big heart ... which maybe wasn't that true for Jobs as far as I understood from the book." G3.3*
Direct observation	*During my first tour of the company, the CEO led me from product to product and explained why each one performs well and how it had been improved from its previous version. (observation during site walk)*	*At the Measuring Conference in April 2015 I was there when the CTO predicted and presented the technological novelties for the following 5 years in the section Area 51. (observation at biannual measurement conference)*	*Dewesoft supports young entrepreneurs in a similar way to the support they received from the Austrian cofounders. They have launched a start-up accelerator, provided entrepreneurs with know-how, and allow them to use Dewesoft facilities and test equipment. (observation during informal conversation and site walk)*
Documents - excerpts	*"If we compare the program solution* Dewe*Soft X1 to X2, the reaction time of output vs input decreased a lot. This is allowing almost real time command execution and is possible only because we are developing both hardware and software in-house which enables us to push the limits of our solution."*	*"SIRIUS is not just a new measurement instrument, it's the first in a brand new generation on the market. By developing our own sales network, we aim to become a fully independent global provider of high-end solutions in measuring technology."*	*"Capital and companies owned by financial conglomerates stagnate, as they are subject to the inverse effect of focusing on capital – if your fundamental goal is just to make money, you will generally be less successful in the long term, and ultimately make less money, too."*

E/B/R

POVZETKI V SLOVENSKEM JEZIKU

THE REFINEMENT AND VALIDATION OF THE SOCIAL RESPONSE SCALE: THE CASE OF MULTINATIONAL CORPORATIONS OPERATING IN TUNISIA

IZPOPOLNITEV IN POTRDITEV LESTVICE DRUŽBENE ODGOVORNOSTI: PRIMER MULTINACIONALNIH PODJETIJ S SEDEŽEM V TUNIZIJI

RIM GHEZAL, ROMDHANE KHEMAKHEM

POVZETEK: *Izpolnjevanje pričakovanj več interesnih skupin in v nekaterih primerih tudi njihovih problemov je največji izziv s katerim se soočajo podjetja. Aktivnosti družbene odgovornosti podjetij kljub temu izzivu doslej niso bile ustrezno dokumentirane v empirični literaturi in so pritegnile relativno malo pozornosti raziskovalcev tega področja (npr de la Cruz Deniz-Deniz, 1999; de la Cruz Deniz-Deniz & Garcia-Falcon, 2002). Eden glavnih vzrokov takšnega stanja je tesno povezan z neobstojem lestvice merjenja aktivnosti družbene odgovornosti med podjetji. Glede na to vrzel v literaturi družbene odgovornosti je glavni cilj študije izboljšati in potrditi psihometrične lastnosti lestvice družbene odgovornosti in ustvariti različico pomanjšano navzdol za podjetja, zlasti za multinacionalne družbe. Prirejena lestvica temelji na predhodni literaturi in je bila testirana na vzorcu 251 hčerinskih družb, ki delujejo v Tuniziji. Lestvica ima štiri dimenzije, v kvantitativni analizi se poudarja visoko zanesljivost in zadovoljstvo, raziskovalni prispevek pa temelji na izsledkih študije. Omejitve so tudi predstavljene in obravnavane skupaj s predlogi za nadaljnje raziskave.*

Ključne besede: *multinacionalne družbe, interesne skupine, družbena odgovornost, družbena vprašanja, stakeholders, lestvice*

INCORPORATION OF SUSTAINABILITY INTO LEADERSHIP DEVELOPMENT

VKLJUČEVANJE TRAJNOSTI V RAZVOJ VODENJA

JUDITA PETERLIN

POVZETEK: *Namen tega prispevka je raziskati implikacije vključevanja trajnosti za razvojne aktivnosti vodenja. Opredeljene so komponente trajnostnega razvoja vodenja, vključno s skrbjo za posameznikovo, organizacijsko, družbeno in okoljsko dobrobit. Prav tako članek ponazarja, kako vključitev vrednote trajnosti določa razvoj vodenja. Ta študija*

nadgradi obstoječe teorije trajnostnega razvoja vodenja z upoštevanjem procesa, ki prikazuje, kako trajnost vpliva na razvoj vodenja prek vključitve širšega spektra vpliva vodenja. Raziskava je novost, saj pomeni alternativo večini predhodnih študij, ki se osredotočajo na bolj omejen vpliv vodje, medtem ko dotična raziskava predlaga trajnostni razvoj vodenja, temelječega na simbiotičnem/simbiotskim kapitalu.

Ključne besede: *trajnostno vodenje, razvoj vodenja, vizija, študija primera*

METACOGNITIVE AND MOTIVATIONAL CULTURAL INTELLIGENCE: SUPERPOWERS FOR CREATIVITY IN A CULTURALLY DIVERSE ENVIRONMENT

METAKOGNITIVNA IN MOTIVACIJSKA KULTURNA INTELIGENTNOST: SUPER MOČI ZA USTVARJALNOST V KULTURNO RAZNOLIKEM OKOLJU

SABINA BOGILOVIĆ, MIHA ŠKERLAVAJ

POVZETEK: *Zaposleni, ki so visoko motivirani za medkulturno sodelovanje (motivacijska kulturna inteligentnost) in lahko prilagodijo svoje mišljenje o medkulturnih razlikah (metakognitivna kulturna inteligentnost), so bolj ustvarjalni v kulturno raznolikem okolju. Na podlagi teorije socialne kategorizacije meniva, da metakognitivna in motivacijska kulturni inteligentnosti lahko zmanjšata negativne vidike procesa socialne kategorizacije ter tako spodbudita posameznikovo ustvarjalnost v kulturno raznolikem okolju. Kvantitativna analiza 787 zaposlenih v 20 srednje velikih večkulturnih organizacijah v jadranski regiji je pokazala, da sta metakognitivna in motivacijska kulturni inteligentnosti pozitivno povezani s posameznikovo ustvarjalnostjo. V prispevku podrobneje razpravljava o pomenu raziskave za prakso in predlagava nadaljnje raziskave.*

Ključne besede: *kreativnost, metakognitivna kulturna inteligenca, motivacijske kulturna inteligenca, kulturna raznolikost*

THE ABILITY–MOTIVATION–OPPORTUNITY FRAMEWORK FOR TEAM INNOVATION: EFFICACY BELIEFS, PROACTIVE PERSONALITIES, SUPPORTIVE SUPERVISION AND TEAM INNOVATION

SPOSOBNOST-MOTIVACIJA-PRILOŽNOST ZA TIMSKE INOVACIJE: KOLEKTIVNA UČINKOVITOST, PROAKTIVNA OSEBNOST, PODPORA VODSTVA IN TIMSKE INOVACIJE

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POVZETEK: *Prispevek temelji na teoriji sposobnosti, motivaciji in priložnosti ter raziskuje prepletanje proaktivne osebnosti članov tima (sposobnosti), kolektivne učinkovitosti (motivacija) in podpore vodstva (priložnosti) ter njihov vpliv na timsko inoviranje. Večnivojska študija je preučevala 249 zaposlenih, ki so bili razdeljeni v 64 timov znotraj nemškega in treh slovenskih visokotehnoloških podjetij. Rezultati študije so pokazali, da je bila kolektivna učinkovitost pozitivno povezana s timskim inoviranjem. Učinek kolektivne učinkovitosti na timske inovacije je bil šibkejši pri moderaciji višjih nivojev podpore vodstva in proaktivnosti. Nadalje ugotavljamo, da v primerih ko so timi zaznali nižje stopnje kolektivne učinkovitosti, sta bila timska proaktivnost in podpora vodstva bolj pomembna za doseganje timskih inovacij, kot so bili, ko so timi zaznali nižje stopnje motivacije. Razpravljamo tudi o teoretičnih in praktičnih posledicah.*

Ključne besede: *timske inovacije, team innovation, teorija sposobnost-motivacija-priložnost, kolektivna učinkovitost*

THE DRIVERS OF SUCCESS IN BUSINESS MODEL TRANSFORMATION

DEJAVNIKI USPEHA PREOBLIKOVANJA POSLOVNEGA MODELA

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POVZETEK: *Obstoječa raziskovalna literatura o poslovnih modelih je še vedno nepopolna glede dejavnikov njihovega uspešnega preoblikovanja. Prispevek raziskuje to vprašanje z uporabo študije primera v kombinaciji z uporabo utemeljene teorije na srednje velikem, visokotehnološkem in globalno usmerjenem podjetju. Na podlagi obiskov na lokaciji podjetja, intervjujev in analize podatkov sekundarnega izvora, študija opredeljuje šest*

splošnih dejavnikov uspešnega preoblikovanja poslovnega modela: transformacijsko vodenje, raziskovalno podprto odločanje, usmerjenost v kupce in industrijo, vsebinsko usmerjena komunikacija, samoiniciativni sodelavci ter postopna strategija ločevanja. Novi dejavniki dopolnjujejo naše obstoječe znanje o tem, kako poteka uspešno preoblikovanje poslovnega modela in kateri so ti dejavniki, medtem ko lahko obsežna razprava o njihovih vplivih pomaga menedžerjem bolj učinkovito izvajati preoblikovanje poslovnih modelov.

Ključne besede: *poslovni model, preoblikovanje, sprememba,strateška partnerstva, dejavniki*