

ECONOMIC AND BUSINESS REVIEW

VOLUME 17 | NUMBER 1 | 2015 | ISSN 1580 0466

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PUBLISHERS:

Faculty of Economics,
Kardeljeva ploščad 17, SI-1001 Ljubljana,
Slovenia.

The review is co-financed by Slovenian Research Agency.

URL: <http://www.ebrjournal.net>

THE REVIEW'S OFFICE:

Economic and Business Review
Faculty of Economics,
Kardeljeva ploščad 17, SI-1001 Ljubljana,
Slovenia
tel: + 386 1 58 92 607, fax: + 386 1 58 92 698,
email: ebr.editors@ef.uni-lj.si

Bound by Birografika Bori d.o.o., Ljubljana
Printed by Copis d.o.o., Ljubljana

Economic and Business Review is indexed in:
Cabell's Directory of Open Access Journals
Publishing Opportunities, DOAJ, Ebsco,
Econlit, IBSS and ProQuest

ISSN 1580-0466

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Journal publication:

Van der Geer, J., Hanraads, J.A.J. & Lupton, R.A. (2000). The art of writing a scientific article. *Journal of the Sociological Communication*, 163 (2), 51–59.

Book:

Strunk Jr., W. & White, E.B. (1979). *The Elements of Style* (3rd ed.). New York: Macmillan.

Chapter in an edited book:

Mettam, G.R. & Adams, L.B. (1999). How to prepare an electronic version of your article. In Jones, B.S. & Smith, R.Z. (Eds.), *Introduction to the Electronic Age* (pp. 281–304). New York: E-Publishing.

Web sites

Factiva (2010). *Dow Jones Reuters Business Interactive LLC*. <http://www.factiva.com> (accessed June 5, 2010).

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IMPACT OF NEGATIVE QUALITY INCONSISTENCY ON BRAND LOYALTY – CASE OF CROATIAN FOOD MARKET

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Received: 2 January 2014
Accepted: 23 April 2015

ABSTRACT: *Attracting and keeping consumers' loyalty in Fast Moving Consumer Goods segment became the main concern for all producing companies and retailers, too. Many marketing researchers argue that product or service quality perception is one of the key elements in brand loyalty building process. When talking about food market, one has to be aware that food consumption has direct impact on human health and, in that context, process of building brand loyalty for food brands is not possible, or it can be hard, if the product quality of food brands is not on the expected level and according to defined food quality standards. The goal of this paper was to understand aspects of connection between food product quality and brand loyalty process better and to explore how problems with negative quality inconsistency in different food categories can influence brand loyalty. An empirical research (on-line survey) was conducted to prove and explain the connection between food product quality and food brand loyalty. The research results shows that the main reasons for being loyal to a certain food brand or product are related mostly to positive brand experience, high and stabile product quality, and recognizable taste. In the context of these research results, it can be concluded that long term consumer satisfaction as a factor in food brand loyalty process depends on stabile product quality, so food manufacturers or food brand owners should be focused on preventing or minimizing the aspect of negative quality issues. Regarding research limitations, the study was conducted only on users from Croatian market; so broadening the survey to other markets should give a clearer view on the connection between food product quality and brand loyalty process.*

Keywords: *food business, food product quality, food brand loyalty process, brand loyalty*

JEL Classification: JEL Classification: M31, L66

INTRODUCTION

Even though food products are a part of Fast Moving Consumer Goods (FMCG) market and brand building process can be applied on the same conditions as all the other FMCG goods, there are some specifics. Specifics are mainly connected to the fact that food consumption is directly connected to human health and consuming bad food can cause health problems. That is the reason why minimum quality standards are also regulated

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by law and numerous regulations (for example Croatian Food Law or EU Food Safety Regulations) and food producers are often communicating different quality standards and certificates which they have implemented in their businesses to show they care about their consumers. Since product quality is one of the bases of consumer satisfaction and brand loyalty, according to numerous marketing researchers (for example: Aaker, 1996; Kotler, 2001, Vranešević, 2007. or Pavlek, 2008), this paper is focused on understanding the aspects of connection between food product quality and food brand loyalty. In that context, it is even more important to examine the impact of negative quality inconsistency on food brand loyalty with the hypothesis that the impact is negative and long term.

When it happens that a fault in some product has been detected and producer decides to withdraw that product from the market, producer needs to inform the public about that situation. When faced with information about quality issue in food product consumers start to be afraid how this “bad” product will affect their health and rather avoid it (stop buying) in total. Understanding the motivations of consumers to behave this way can be described through theory of reasoned action. The theory of reasoned action focuses on cognitive factors (beliefs and values) that determine motivation (behavioural intention). The theory has been useful in explaining behaviours, particularly behaviours under volitional control (Montano and Kasprzyk, 2008).

In order to answer how negative quality inconsistency influences food brand loyalty, this paper is structured so that it firstly gives general answers, based on previous research in the field, that explain brand loyalty models and their connection with product quality (chapter 1). Those previous researches are the basis for the construction of the survey with two goals (chapter 2): 1) to answer *how* negative quality inconsistency affects food brand loyalty and 2) to examine if negative impact is proven, is it also *long term*?

The conclusion of the research results (chapter 5) should give an insight into the specific problem of food brand management process by application of brand loyalty theory, thus making a contribution to the development of brand management and strengthening of the connection of product quality and brand loyalty in the special field of food marketing. In opposite to previous research regarding product quality inconsistency and cases of product withdrawal which are mainly focused on understanding how brands can overcome product-harm crises (see eg. Dawar and Pillutla, 1997; Dutta and Pulling, 2011 and Cleeren, Heerde and Dekimpe, 2013) this paper provides a slightly different perspective. The most important contribution of the paper is providing the managerial tool for understanding the impact of negative quality inconsistency to food brand loyalty.

1. LITERATURE REVIEW - WHAT DOES BRAND LOYALTY STAND FOR?

In the process of investigating how negative quality inconsistency of a certain branded product can affect brand loyalty the first step is to define through the literature review:

- What does brand loyalty stand for?
- Can we measure brand loyalty?
- How is product quality connected to brand loyalty?

1.1. Defining brand loyalty

Building and maintaining brand loyalty has always been one of central themes for researches in marketing theory, as well as in practice. Simply described, loyalty to a certain brand can be seen through repetition of purchases that a consumer is willing to do for one or more product/services under the same brand. But brand loyalty has much more layers than that. It is directly linked to consumer psychology so it has to be described in more details. One of the definitions says: brand loyalty is a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour (Oliver, 1999, 34). Also, brand loyalty can be divided in two dimensions: attitudinal and behavioural. Where the attitudinal brand loyalty includes cognitive and affective dimension and behavioural intent dimension is an intermediary between attitude and behaviour, representing the intention to act in the buying decision process. Behavioural intent appears in various forms such as a predisposition to buy a brand for the first time or a commitment to repurchase a current brand (Gomman, Krishnan and Scheffold, 2001).

On the other hand Aaker (1996) defines brand loyalty as the core dimension of brand equity and argues that a loyal customer base represents an entry barrier, a basis for a price premium, time to respond to competitor innovations, and a bulwark against deleterious price competition.

A vast number of researches contributes to defining brand loyalty from numerous aspects and points of view, for example Chaudhuri and Holbrook (2001) explore the relationship among brand trust, brand effect and brand performance outcomes in relation to brand loyalty; or Keller (2003) who argues that for understanding brand knowledge, one must take into account its multiple dimensions (awareness, attributes, benefits, images, thought, feelings, attitudes and experiences); etc.

Some newer researches also extend to e-marketing, for example Gomman, Krishnan and Scheffold (2001) explained that conventional brand loyalty development efforts have relied substantially on brand image building through mass media communications, however in e-marketing process, database technology makes it possible to put more emphasis on the cognitive dimension by offering customized information.

Generally speaking, loyalty implies satisfaction, but satisfaction does not necessarily lead to loyalty. Consequently, there is an asymmetric relationship between loyalty and satisfaction (Oliver, 1999). To show difference between satisfaction and loyalty we can also refer to Kotler who explains that on the one side we have brands on the market that are unknown to consumers and on the other side we have:

- brands with high level of brand awareness (measured with consumer remembering or recognition),
- brands with high level of acceptance (which most consumers will not refuse to buy),
- brands with high level of advantages (those which consumers will choose before others in one store, but if they are not available they will just choose second best)
- and finally, brands with high level of loyalty (Kotler, 2001).

Brands with high level of advantages are satisfactory for consumers, but consumers are really loyal to a brand when they are ready to take extra cost, time and effort (for example drive to another store if necessary) to buy that specific brand.

From a consumer's point of view, in the buying process one is faced with a multiple choice of products that can satisfy his specific need and there is a possibility of making bad purchasing choice. In other words, a consumer wants to reduce the risk of making a mistake when choosing a product. One of the ways to reduce this risk is to buy the specific branded product which was satisfactory in the past and the consumer had a good experience with it and to become loyal to it. We can say that the greater the perceived risk is, the more loyal the consumer is. Most loyal consumers strongly believe that "their" brand of a product has significantly better characteristics than other products (Kesić, 1999, p. 129).

The following have been identified as the most common benefits that brand owners can get from brand loyalty (Moolla, 2010.):

- Higher sales volume
- Premium pricing ability
- Retain rather than seek - brand loyalist are willing to search for their favourite brand and are less sensitive to competitive promotion (Moolla, 2010, p. 89)
- Creating perception – premium pricing creates the perception of premium quality
- Increased usage and spending
- Contributions to Return on Investment (ROI)
- Financial benefits
- Customer acquisition
- Enhanced return
- Strategy for reducing ongoing expense
- Lower price elasticity
- Referrals

1.2. Brand loyalty measuring scope

Brand loyalty has a lot of layers and when we talk about measuring brand loyalty we have to see through all of its layers and investigate one by one.

Research agencies offer different tools which can help in brand management, like measuring brand awareness, buying willingness, price sensitivity, market shares, retail distribution, etc. Information gathered in market and consumer researches when combined with internal company data (like sales growth, gross margin growth) can give brand managers a significant insight into their company's brand.

Different researchers in past decades were trying to give a unified model for measuring brand loyalty from several points of view but none of these theoretical models really came to life in practice. In preparations to propose his own model for brand loyalty measurement in FMCG, Moolla listed and gave a short description of more than fifteen theoretical

models for measuring brand loyalty proposed from different authors in past fifty years. He concludes: Most brand loyalty models presented have been researched well and possess merits, although the differences between models are vast. One can never select one model as the most significant. (Moolla, 2010, p. 137) Nevertheless, Moolla has identified twenty six influences on brand loyalty from previous concepts and concluded that they can be filtered to twelve influences relevant for FMCG as shown in figure 1.

Figure 1: *Influences on Brand loyalty in FMCG*



Source: adopted from Moolla (2010, p. 145)

Moolla and Bisscoff put Moolla's model for measuring brand loyalty in FMCG on the test to prove if the model can be operationalized as managerial tool. They concluded it can, but it should be subjected to further evaluation to ensure that the model measures loyalty in a wide range of FMCG products similarly (Moolla and Bisscoff, 2012).

1.3. Connecting product quality and brand loyalty concept

The last question stated at the beginning of this chapter regards the connection between product quality and brand loyalty.

In its basic, simplified meaning, a brand is mostly perceived like a quality warranty recognizable on the market (Vranešević, 2007) or more precisely, as a means of identification

of individual product or service for which a producer or brand owner gave warranty for promised performances or level of, so-called, functional quality (Pavlek, 2008, p. 89). When talking about quality, the market perceived quality needs to be taken in consideration regarding product's ability to (Vranešević, Vignali and Vrontis, 2004, p. 239):

- be functional in its basic purpose,
- liability to perform its basic purpose,
- be long-lasting and easy to maintain,
- be simple and safe to use
- be well designed and styled
- have good company reputation and brand image
- lead to total satisfaction during continuous use of the product.

If all of the seven above mentioned points are on satisfactory level for customers/consumers, we can say that the perceived quality of the product is high.

In general, satisfaction can be defined as a feeling of comfort or disappointment that comes from comparing expected and received values or performances of the product. If performance is not on the expected level, the consumer is not satisfied; if it is, the consumer is satisfied. And if the product performance is over the expected level, the consumer is very satisfied or even overwhelmed (Kotler, 2001, p. 40).

Customer satisfaction is directly linked with brand loyalty building process and product quality is a base for customer satisfaction. It is clearly obvious that in long term, creating brand loyalty is not possible if the product quality is not on the expected level.

2. RESEARCH GOALS

During 2013, consumers in Croatia were frequently (or at least more than usual) faced with different kinds of food products withdrawal from the market caused by different kinds of quality mistakes. For example, during first few months of 2013 Konzum's private label Rial tuna cans had to be removed from the market because of high level of histamine and the biggest food affair in Croatia in past few years occurred when in short period of time even three milk producers (Dukat, Vindija and Meggle) had to withdraw several production series of their milk due to containing high level of aflatoxin. All of these quality inconsistencies of the mentioned food products affected their consumers. Consumers could be afraid that those products may seriously affect their health. Food is directly connected to human health, so those fears are understandable and normal.

Food industry is one of the most important pillars of Croatian economy (largest industry in terms of sales values according to Statistical Yearbook of the Republic of Croatia for 2014 (Ostroški ed, 2014)) and managing product quality in this sector, the image of its brands and building loyalty is a very important issue for Croatian economy in total, especially now when Croatia joined the European Union. Croatian market represents just a small part of total EU market where big multinational companies like Unilever or Nestle are leaders among branded products (FoodDrinkEurope, 2014) and big international retail chains like Tesco, Carrefour or Auchan dominate the private label segment (Kantar retail, 2013).

The previous chapter describes brand loyalty and what affects brand loyalty. Based on previous researches we can conclude that customer satisfaction directly affects brand loyalty. We can also conclude that customer satisfaction is based on perceived product quality.

As it was already explained in the introduction, research goal of this paper is to find out how problems with negative quality inconsistency in food products can affect customer satisfaction and if ultimately they have a negative impact on food brands loyalty in the long run.

3. RESEARCH METHODOLOGY

Empirical research *Impacts of quality inconsistency on customer satisfaction of food brands in Croatia* was conducted in 2013 on the sample of Coolinarika.com users. Coolinarika.com is in top ten Croatian web portals with the reach of 22.34 %, or more than 0.5 million visitors on a monthly base (geminusAudince.com.hr, 2013) and with more than 97.000 registered users (Coolinarika.com, 2013). Coolinarika.com is considered leading cooking web site, not only in Croatia, but also in the region of South Eastern Europe, for all food and cooking related topics as well as for exchanging and sharing recipes. The most important thing when constructing a research sample of users of Coolinarika.com is that these users are considered opinion makers in segment of food related topics so we can say that they can be also considered the relevant sample for the research.

Questionnaire for the research was constructed, besides from opening demographic questions, from series of closed-ended (some with multiple choice) and open-ended questions. Questions were positioned in a specific order to lead the participants gradually from more general questions about their food shopping process to more specific ones about how they experience the problems with quality of the food products of their choice. The process of constructing questions in the questionnaire was based on previous experiences from applied researches on food brands and food consumers. Experiences are collected through interviews with brand and research managers from some of the largest Croatian food manufactures.

Data collecting process was organized by sending invitations to 5.123 randomly selected Coolinarika.com users from Croatia to take part in the survey and answer the listed questions with a goal to collect a minimum of 500 filled questionnaires.

The collected data was processed with the Statistical Package for the Social Sciences or SPSS software.

4. INTERPRETATION OF THE RESULTS

4.1. Sample characteristics

Data collecting process described in the previous chapter finally resulted with 681 participants who entered and fully answered the questionnaire, with respond rate of 13.3%. Demographic characteristics of the sample are described in detail in table 1.

Table 1: *Demographic data*

		N	%
Total sample		681	100
Sex	Male	66	9,7
	Female	611	89,7
	Unanswered	4	0,6
Age	Less than 15	0	0,0
	15-24	62	9,1
	25-34	301	44,2
	35-44	200	29,4
	45-54	82	12,0
	55-64	31	4,6
	65 and more	5	0,7
Education	Unfinished elementary school	0	0,0
	Elementary school	3	0,4
	Secondary school	299	43,9
	Advanced school	112	16,4
	University	237	34,8
	M.A. degree /doctorate	30	4,4
Working status	Full time job	413	60,6
	Part-time job	68	10,0
	Unemployed	161	23,6
	Retiree	34	5,0
	Unanswered	5	0,7
Members of household	1	39	5,7
	2	148	21,7
	3	167	24,5
	4	217	31,9
	5+	108	15,9
	Unanswered	2	0,3
Marital status	Single	161	23,6
	Married	483	70,9
	Divorced	24	3,5
	Widowed person	9	1,3
	Unanswered	4	0,6
Personal income	Without any income	67	9,8
	up to 2000 kn	54	7,9
	2001 to 3500 kn	94	13,8
	3501 to 6000 kn	235	34,5
	6001 to 8500 kn	73	10,7
	up to 8500 kn	54	7,9
	I do not want to answer	104	15,3
Settlement size	up to 2000 citizens	73	10,7
	2000 to 10000 citizens	152	22,3
	10000 do 100000 citizens	202	29,7
	more than 100000 citizens	254	37,3

Source: Survey

4.2. Major findings

The majority of the research participants (65%) says that they equally buy food products branded with producers owned brands and from retailers owned brands (private labels). Others buy solely producers' brands (30%), or solely private labels (5%).

Research also shows that there are some differences between different food categories in preferring producers' brands or private labels, for example categories in which producers' brands are preferred are milk and dairy products, meet products, coffee and tea, products for cake baking, spices; and categories in which private labels are preferred are snack, pasta and rice, chocolate and cookies, tomato products, flour.

An interesting finding in those data is the fact that two categories with the least chance to be preferred as a private label are baby food and honey; only 23 respondents said that they prefer private label when choosing baby food and only 26 when choosing honey. Table 2 shows preferences in choosing brands or private labels by category.

Table 2: *Top five categories for producers' brands vs. top five categories for private labels (multiple choice answers N=681)*

Top five categories where consumers prefer producers' brand over PL		Top five categories where consumers prefer PL over producers' brand	
Food category	Respond frequency (sample 681)	Food category	Respond frequency (sample 681)
Milk and dairy	475	Snack (chips, flips etc.)	361
Meet and meet products	458	Pasta, rice	307
Coffee and tea	405	Chocolate, cookies	266
Cake baking products	370	Tomato products	248
Spices	343	Flour	239

Source: Survey

To the question "Is there a particular brand among the food products to which you are totally loyal?" 80% of participants said YES. Research participants named 154 different brands from the top of their mind. Table 3 shows sixteen of them with highest response frequency.

Table 3: *Food brands that have totally loyal consumers (N=681)*

Brand	Frequency	%	Brand	Frequency	%
Podravka	304	20,3	Barilla	36	2,4
Vindija	107	7,1	Zvijezda	35	2,3
Ledo	98	6,5	Pik	33	2,2
Kraš	85	5,7	Nescafe	21	1,4
Vegeta	81	5,4	Jamnica	18	1,2
Franck	63	4,2	Nutella	18	1,2
Dukat	56	3,7	Z bregov	15	1,0
Gavrilović	48	3,2	Dr.Oetker	15	1,0

Source: Survey

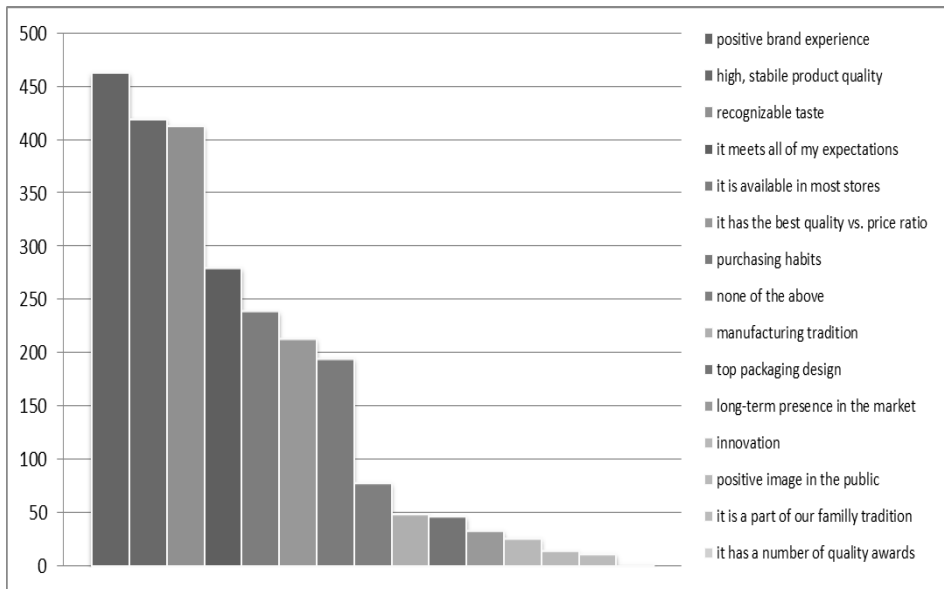
An interesting observation that can be drawn from the results in table 3 is that among the listed brands to whom consumers are totally loyal are only three that do not have Croatian origin and that the first of them, Barilla is barely on the ninth position with only one vote more than Zvijezda.

When asked why they are loyal to the particular brand, as the main group of reasons (frequency in answers above 400) participants single out: 1) positive brand experience, 2) high, stable product quality and 3) recognizable taste.

The second group of reasons with still significantly high frequency in answers (between 150 and 400 answers) are: it meets all of my expectations, it is available in most stores, it has the best quality vs. price ratio, purchasing habits; as shown in figure 2.

Figure 2 also shows that characteristics like manufacturing tradition, top packaging design, long-term presence in the market, innovation or positive image in the public, which in Marketing theory are believed to be basics for marketing strategy and brand building processes, are not significant reasons for the research participants for being loyal to their brand of choice (frequency in answers less than 150).

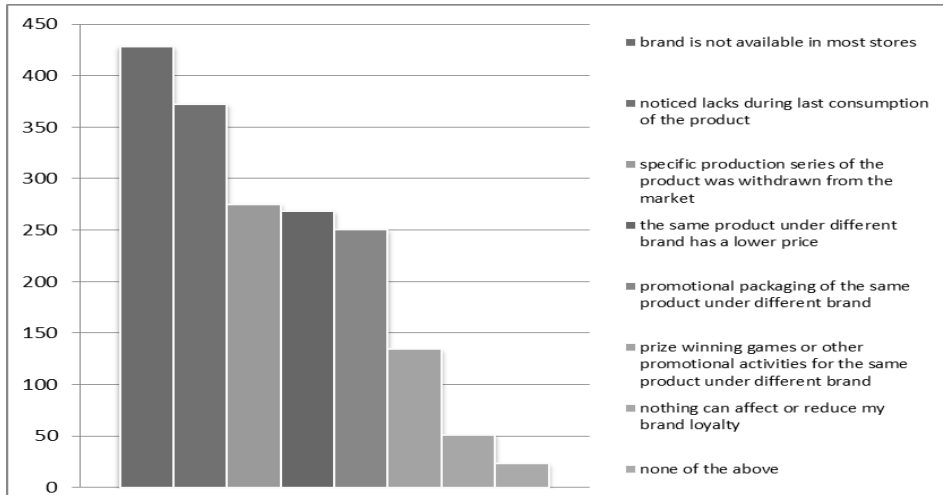
Figure 2: *Reasons for being loyal to food brands*
(multiple choice answers, N=681)



Source: Survey

The factors (and their relevance) that can affect the reduction of brand loyalty are shown in figure 3.

Figure 3: Reasons for reduction of brand loyalty
(multiple choice answers, N=681)

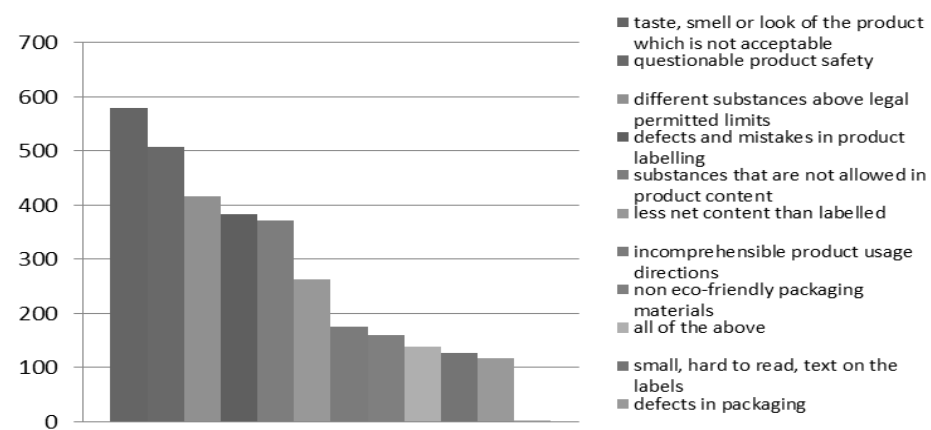


Source: Survey

The main factor in brand loyalty reduction is connected with product distribution coverage in the market. The second and third reasons are connected with the product quality problems (noticed lacks during last consumption of the product, specific production series of the product was withdrawn from the market), both with significantly high frequency in responses. The following reasons are the ones connected to price and promotional activities, which are not in focus of this research.

Research participants were also asked to define what (from their point of view) a product with low or poor quality is; answers are shown in figure 4.

Figure 4: What is a product with low or poor quality?
(multiple choice answers, N=681)



Source: Survey

Other than organoleptic characteristics (taste, smell, visual appearance) which are for obvious reasons the most important characteristics in terms of food, research participants are mainly concerned about product safety (can some product affect their health if it contains some substances that are not allowed in food products or they are over permitted limits). At the end, they also pay attention to product packaging and labelling but those factors are not of top concern.

Research participants (66%) can name products that have been recently withdrawn from the market. Milk stands out from the list with high frequency in answers (47%).

Table 4: *Products withdrawn from the market*
(N=672)

Product	Frequency	%
Milk	318	47
Tuna, canned fish	133	20
Baby food	81	12
Crust, dough, strudel pastry	45	7
Meet, meet products	25	4
All other answers	70	10

Source: Survey

Following to naming products that have been withdrawn from the market, research participants can also name the specific brands involved in withdrawal. Three milk brands, Dukat, Vindija (Z bregov) and Meggle, have the highest percentages in answers. K plus, Rial and Konzum are also high on the list in table 5, which can be connected to secondly named products from table 4 (tuna/canned fish).

Table 5: *Brands withdrawn from the market*
(N=715)

Brand	Frequency	%
Dukat	232	32
Vindija (Z bregov)	180	25
K plus	62	9
Meggle	56	8
Clarum	32	5
Rial	23	3
Hipp	19	2
Konzum	14	2
Alnatura	12	2
Nestle	8	1
Dm	8	1
All other answers	69	10

Source: Survey

53% of research participants stated that they remembered exactly what the reason for market withdrawal had been.

If we take a look at table 6 we can also notice that research participants can (63%), with relatively high accuracy, name the quality inconsistency or the quality defect of the product they name as a product that was withdrawn from the market.

Table 6: *Quality defect that was the reason for market withdrawal of food products (N=427)*

Quality defect that was reason for market withdrawal	Frequency	%
Too high level of aflatoxin	157	37
Product contains unauthorized substances	40	9
To high level of some substances	37	9
Histamine	32	8
Harmful substances	24	6
Pieces of glass in baby food jars	22	5
Unauthorized preservative / additives	17	4
Too much of something	14	3
Some poison	11	3
Bacteria	10	2
Presence of metal / mercury / lead	10	2
Carcinogenic ingredients	8	2
Products are not safe for health	8	2
GMO ingredients	7	2
All other answers	30	7

Source: Survey

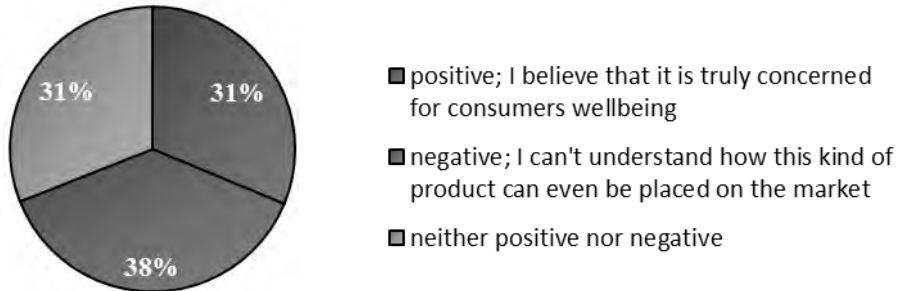
From the results in answers to questions about product type, brand and quality defect we can identify the following cases of product withdrawal that had happened in less than a year before the research was conducted according to Croatian Ministry of Agriculture through Croatian Rapid Alert System for Food and Feed (HR RASFF):

1. In February 2013 there were several notices about *milk product withdrawal* from different producers or brands: Dukat and Vindija – on 8th February, Dukat, Meggle, Mercator and Lidl – on 19th February.
The reason for withdrawal in all of the listed cases was increased level of aflatoxin. (Ministry of Agriculture, 2013)
2. Also in February there was a notice about tuna can withdrawal under brand name Rial that is a private label of Konzum retail chain.
The reason for withdrawal was an increased level of histamine. (Ministry of Agriculture, 2013)
3. In March the Ministry issued a notice for baby food in jar from Alnatura distributed by retail chain DM.
The reason for withdrawal was possible presence of glass pieces in the content of the product. (Ministry of Agriculture, 2013)
4. Last year, in October 2012 a notice for withdrawal of fresh strudel dough from the producer Clarum was issued.
The reason for withdrawal was usage of unauthorized additive in product content. (Ministry of Agriculture, 2013)

Those four cases can be easily recognized within the answers gathered through the research since most of the participants described them very accurately.

The participants were also asked what they thought about the food producer that had made the decision for market withdrawal. Respondents' answers are illustrated in figure 5.

Figure 5: *Opinions about the producer that made the decision for product withdrawal (N=681)*



Source: Survey

More than one third or 38% have a negative opinion about producers that have undertaken the measures of withdrawing a product from food market, because they cannot understand why a product with some quality problems is even available on the market.

Table 7 shows how market withdrawal will influence the decision making process in the following purchase of this kind of product.

Table 7: *Future decision making process for the products that were withdrawn from the food market (N=681)*

	Frequency	%
I would proceed to buy the same product from my favourite brand – no influence	40	6
I would temporarily stop buying the product from my favourite brand but as soon as I were certain that the inconsistency or defect were removed, I would return to my normal shopping behaviour – temporary influence	420	62
I would permanently stop buying the product from my favourite brand – significant influence	63	9
I would start buying the same product from different brand	135	20
I would stop buying this sort of product entirely	23	3

Source: Survey

Producers or brand owners might find comfort in the fact that 62% of their loyal consumers would gradually come back to buying their product after a short brake or after the

market withdrawal was finished. But they should also be aware of the fact that more than 20% of consumers, according to these research findings, can be lost.

If we take a closer look at the collected data and we further look into the difference in answers between the participants that stated they were loyal to a certain brand (80%), with their attitude (positive, negative or neutral) towards brand owners decision about product withdrawal (shown in the figure 5) and its influence to further decision making process of purchasing products that have been withdrawn from the market (shown in table 7), we can see that there is no noticeable difference in stating the negative opinion between the research participants who said they were loyal to some brand and those who said they were not.

Table 8: *Difference in opinions and purchasing decision making process between loyal and disloyal consumers (N=681)*

		Future decision making process for the products that were withdrawn from the food market					
Opinions about the producer that made the decision for product withdrawal		No influence	Temporary influence	Significant influence	Would buy another brand	Would stop buying the product in total	Total freq.
Loyal	Positive	20	115	11	21	3	170
	Negative	6	113	28	55	6	208
	Neutral	5	117	12	29	4	167
	Total freq.	31	345	51	105	13	545
Not loyal	Positive	3	27	4	9	0	43
	Negative	2	25	6	9	7	49
	Neutral	4	23	2	12	3	44
	Total freq.	9	75	12	30	10	136
Total freq.	Positive	23	142	15	30	3	213
	Negative	8	138	34	64	13	257
	Neutral	9	140	14	41	7	211
	Total freq.	40	420	63	135	23	681

Source: Survey

From table 8 we can also see that, although product market withdrawal has temporarily influence with most of the research participants, the research participants who said they were loyal to some brand and had a negative opinion of market withdrawal of their brand will be the most likely candidates for changing their purchasing habits and switching to another brand.

If we extract the data for the example of milk withdrawal (research participants that named Dukat, Vindija and Meggle as the example of a product withdrawal), we can see consistency in the previously shown data, see table 9.

Table 9: *Difference in opinions and purchasing decision making process between loyal and disloyal consumers of milk (N=266)*

Opinions about the milk producer that made the decision for product withdrawal		Future decision making process for the milk products that were withdrawn from the market					Total freq.
		No influence	Temporary influence	Significant influence	Would buy another brand	Would stop buying the product in total	
Loyal	Positive	5	44	3	8	2	62
	Negative	2	44	13	21	2	82
	Neutral	0	53	6	13	2	74
	Total freq.	7	141	22	42	6	218
Not loyal	Positive	0	12	1	4	0	17
	Negative	1	6	1	4	2	14
	Neutral	1	11	1	3	1	17
	Total freq.	2	29	3	11	3	48
Total freq.	Positive	5	56	4	12	2	79
	Negative	3	50	14	25	4	96
	Neutral	1	64	7	16	3	91
	Total freq.	9	170	25	53	9	266

Source: Survey

5. CONCLUSION

Today's consumers are very sophisticated and aware of the importance of product quality as one of the main factors in building brand loyalty. For years, branded products in FMCG became a synonym for higher level of quality and consumers have higher expectations, than for example, from private labels or unknown products.

Previous researches show that perceived quality is closely related to product's ability to satisfy certain consumer needs or expectations like to be functional in its basic purpose, to be liable to perform its basic purpose, to be long-lasting and easy to maintain, to be simple and safe to use, to be well designed and styled, to have good company reputation and brand image and to lead to total satisfaction during continuous using of the product, even above the expected level. Also, premium level of price positioning has an influence on the perception of product quality as a higher one.

The main goal of this paper was to confirm product quality as one of the most important factors in food brand loyalty process and to investigate if and how negative quality in-

consistency of a product influences brand loyalty. The research which was conducted to prove and explain the connection between product quality and brand loyalty shows that the main reasons for being loyal to certain brand or product are related mostly to positive brand experience, high, stabile product quality and recognizable taste.

When it comes to product quality issue, consumers emphasised disadvantages like unusual taste, smell and visual appearance. Also, they mentioned doubtful product safety and unreliable product packaging and labelling.

One of the most interesting findings was that more than a half of the research participants could name products, categories and brands that have been recently withdrawn from Croatian market because of a quality problem. It is important to notice that 63% of research participants could, with relatively high accuracy, clearly indicate the negative quality inconsistency or the quality defect of the product they specified as a product that was withdrawn from the market.

This research showed that withdrawal from the market has a huge negative impact on buying willingness in execution phase and a certain period after it and in that way is consistent with the hypothesis that negative quality inconsistency affects food brand loyalty in a negative way and that the effect is long term. Despite that fact, producers or brand owners might be calm because 62% of their loyal consumers would gradually come back to their favourite brand or product after they were sure that negative inconsistency or defect had been totally removed. But also they must be aware that there is a huge risk of losing a certain percentage of loyal consumers who could not find an excuse for such failure.

According to above mentioned, customer/consumer satisfaction as a factor in food brand loyalty process, in the long term depends on product quality issue. Food brand owners should manage every negative product quality inconsistency with great care and through total quality management prevent or minimize possibilities for future quality issues.

Regarding research limitations, study was conducted only on Croatian market, so one should be aware of that fact when applying conclusions from this research in general food brand management.

In respect of possible future research there are a few possibilities that should be considered: broadening the research to other markets (outside Croatia), and investigating how different food brand owners manage the situations when they are faced with product withdrawals.

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INTANGIBLE CAPITAL, INNOVATION AND EXPORT-LED GROWTH: EMPIRICAL COMPARATIVE STUDY OF SLOVENIA AND THE WESTERN BALKANS

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Received: 30 April 2014
Accepted: 19 May 2015

ABSTRACT: *In the face of progressing globalisation and liberalisation of the markets, innovation is the minimum necessary requirement for companies and countries to be globally competitive, and knowledge is the key input. In a comparative study we investigate the intellectual capital of a sample of firms from the Western Balkans and Slovenia, and analyse the link between intellectual capital, innovation, and export volume. Using unique survey data sets for these countries, we propose a structural model to examine our hypotheses. The results suggest that possessing intellectual capital does not suffice for firms' global competitiveness and that higher presence on global markets may offer exposure to more advanced knowledge that firms cannot obtain in their domestic markets.*

Keywords: intangible capital, innovation, export-led growth, Slovenia, Western Balkans

JEL Classification: O32, M21

1. INTRODUCTION

There is a consensus among both, scholars and policymakers on the growing role played by intangible assets on firms' productivity and, consequently, on the performance of local economies. And while this is true in the industrialised countries where competition is predominately based on ideas and innovations, technologically less developed countries need to strategically nurture their intangibles and learning capabilities in order to be able to benefit from the existing knowledge and spur innovation.

From a firm's perspective, the intangibles are crucial for transitioning to and competing in the today's knowledge-based economy. The reason that they are so valuable in building and sustaining the firm's competitive advantage resides in their characteristics – they are valuable, rare, and extremely difficult to imitate and substitute for (such are, for example organizational history, culture, learning, and other human dimensions of organizations). There are multiple sources of knowledge creation within companies and their examination has shown that the knowledge base on which innovating firms found their activities has become broader and more complex (Canibano, Garcia-Ayuso & Sanchez, 2001). The

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conversion and utilisation of this knowledge is closely related to the different aspects of firms' intangible capital (human capital, structural capital, relational capital) and the investment in them.

In this study we model the impact of the firm's intangible capital (IC) on its innovative culture, which in turn is related to the export activity. Based on the dominant stream in the literature, we adopt the following three basic components of intangible capital: (1) human capital, which includes learning, know-how, and skills; (2) structural capital, which contains organizational (and at times, also technological) elements that pursue integration and coordination within the firm, and (3) relational capital, which gathers the value of the relationships that the firm maintains with external agents (business activity close by or with other more distant social agents) (de Castro & López Sáez, 2008, p. 26).

Drawing from the overarching literature on innovation, intangible capital, and trade literature, we examine the existing knowledge in firms (captured by the state of the intangible capital), the potential it has in driving their innovativeness (how human capital, structural capital, and relational capital relate to innovation) and, consequently, how innovation relates to firms' competitiveness on foreign markets (reflected in their export volume). We propose that the more the firm's intellectual assets are interconnected, the more its management values radical innovation, which then builds the firm's success in the export markets. On a basis of a larger survey on intangible capital conducted in Albania, Republika Srpska of Bosnia and Herzegovina, and Slovenia, we test these hypothesised relationships by using structural equation modeling. The study analyses the role of intangible capital in the manufacturing companies from a region that ranks relatively low in technological development, low in intangible investments and, with limited openness to foreign markets, and compares it to the state of the manufacturing sector from an economy that has already built a significant presence on the international market.

The paper is structured as follows. Section 2 offers a general overview of the economic and innovation development of the Western Balkan economies and of Slovenia. In section 3 we discuss the conceptual framework for our hypotheses, review the definitions and examples of the different aspects of the corporate intangible capital, and innovation as their function, and finally discuss the evidence in the trade literature about the relationship between innovation and exports. Section 4 discusses the methodological framework, and section 5 presents the results from the empirical analysis. The study concludes with a discussion in section 6.

The contribution of this paper is severalfold. First, this study represents the first empirical study of the linkage between intellectual capital, innovation, and exports at a corporate level in the Western Balkan economies. Expanding it to a comparative study with a more developed economy that has already completed its transition from a shared history it offers additional insights in the discussion on bridging the development gap through export-led growth strategy. The present study uses original firm-level survey data and proposes firm-level measures for human, structural, and relational capital, and reveals which indicators of firm's knowledge-based assets are significant in the studied countries. Finally, the stylised findings of this study suggest that possessing intellectual capital does

not suffice for firms' foreign market competitiveness, which is an insight that may inform future policy decisions.

2. OVERVIEW OF THE ECONOMIC AND INNOVATION DEVELOPMENT IN THE WESTERN BALKANS AND SLOVENIA

The present study examines the cases of two emerging economies from the Western Balkans (Albania and Republika Srpska of Bosnia and Herzegovina) on one hand, and Slovenia, on the other, which is a more developed country from the Balkan region and an EU member from 2004³ (see table 1).

Table 1: Selected macroeconomic indicators

	Albania	Bosnia and Herzegovina	Slovenia
Economy & Growth Indicators			
<i>GDP per capita (current US\$)</i>	4,256.0	4,409.6	22,488.4
<i>GDP growth (annual %)</i>	1.6	-1.2	-2.6
<i>Exports of goods and services (% of GDP)</i>	33.3	30.9	73.2
Innovation and S&T Indicators			
<i>High-technology exports (% of manufactured exports)</i>	0	2	6
<i>Research and development expenditure (% of GDP)</i>	n/a	n/a	2.80
Financial Sector Indicators			
<i>Domestic credit to private sector (% of GDP)</i>	39.0	63.0	85.7
<i>Foreign direct investment, net inflows (BoP, current US\$)</i>	920,080,650	334,821,080	-227,373,077

Source: World Bank, 2012

All three countries are small, open economies that pursue the export led model of growth (IMF, 2012a; 2012b; 2012c). Slovenia has been successfully following the export-led strategy for growth throughout the entire transition period. It is a very open economy (exporting two thirds of its GDP) with a highly export-oriented manufacturing sector that places roughly 85% of its products abroad (Damijan & Kostevc, 2006). On the other hand, Bosnia and Herzegovina and Albania have embarked on a growth model that emphasizes exports only recently, predominately as a response of the global financial crisis of 2008 (World Bank, 2013a, 2013b). The export intensity of Albania is at a similar level as that of

³ Slovenia and Albania are independent countries, while Republika Srpska of Bosnia and Herzegovina is part of the federation with Bosnia and Herzegovina. Given the lack of representative data for the entire country, we focus on the market of Republika Srpska of Bosnia and Herzegovina (Republika Srpska in continuing) for which a representative sample was obtained in a company level survey conducted in 2011.

Bosnia and Herzegovina (31% of GDP). Since 2003 the Albanian economy has witnessed an increase in the share of export in its GDP by 10 percentage points, while the export orientation of Bosnia and Herzegovina has remained almost unchanged (a rise of only 1 percentage point since 2003) (World Bank Database, 2014). According to IMF (2012a, 2012b) boosting the exports remains one of the main development challenges for Bosnia and Herzegovina as well as for Albania. IMF (2012a) warns that especially the export sector in Albania is relatively undiversified (comprised primarily of traditional industries, like textiles, with some reorientation to oil and minerals in the past period). Both countries have experienced a decline in the already limited exports due to the financial crisis, while the sharp increases in imports, particularly capital goods, have led to large and growing trade deficits (World Bank, 2013a; 2013b).

According to Schwab (2012), both Albania's and Bosnia and Herzegovina's economies are currently at the stage of efficiency-driven development. On the other hand, Slovenia at present is an economy that has already transitioned to the third stage, the stage of innovation-driven development. The innovation performance of the Western Balkans economies is overall low, by international standards. According to the Global Innovation Index⁴ Rank of 2012, Bosnia and Herzegovina is 72 out of 125 countries, and Albania's is 90, which is well below the average of other countries of the Western Balkan region (60). Slovenia, for comparison, has an innovation rank of 49.9, which is still above the Europe's average ranking of 47.9 (INSEAD, WIPO, 2012).

The major problems facing the current innovation systems in the Western Balkan economies are the weak R&D capabilities in both, public and private sector, and the marginal government funding, (Silajdzic (2012) and Bartlett et al. (2012)). This context is emphasized by the lack of effective policy measures for innovation or cohesion between industrial and innovation policy. Nonetheless, improving innovation is to large extent in the hands of the companies and the way to achieve it is closely related to strengthening their intangible capital and the utilisation of knowledge. The present study offers an insight in the current state of these aspects and examine and the potential of an export-led model of growth by relating the estimates with the exporting activity of the manufacturing sectors.

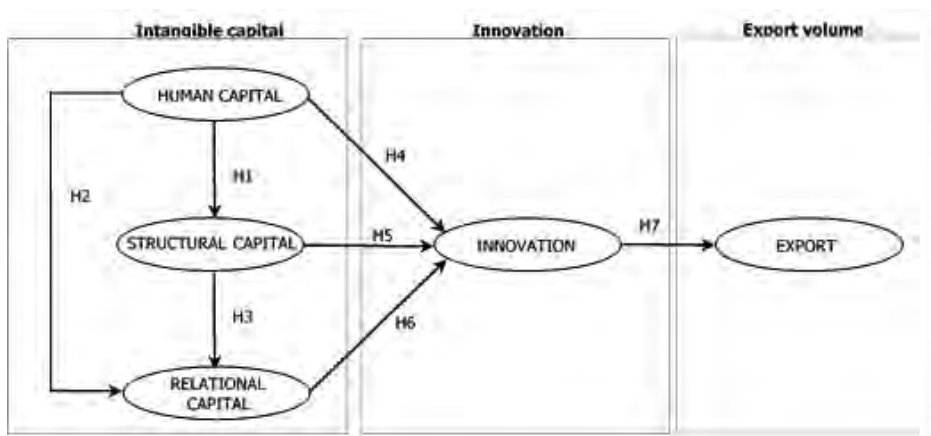
3. CONCEPTUAL FRAMEWORK AND HYPOTHESES

The present work proposes a model that relates the existing intangible capital in the companies (the human capital, structural capital, and relational capital and the dynamism among them), and their relation to innovation, and, consequently, the export volume. Integrating the literature on intellectual capital, we propose that the intangible capital com-

⁴The Global Innovation Index (GII) score is calculated as the simple average of the Input Sub-index (an average of elements of the included national economies that enable innovative activities, such as institutions, human capital and research, infrastructure, market sophistication, and business sophistication) and the Output Sub-Index (an average of innovation output measures including knowledge and technology outputs, and creative outputs). For more detailed clarification of the calculation of the GII and its objectives, refer to INSEAD, WIPO (2012).

ponents and their interrelatedness affect innovation positively (Lev, 2003; Chen, Zhu & Xie, 2004; González-Loureiro & Pita-Castelo, 2012). Following evidence in trade theory, and the international marketing literature that more innovative companies are more likely to be more export oriented (Wagner, 1996; Wakelin, 1997; Weifens et al., 2000; Griffith et al., 2006), we further propose that the link between innovation and the export volume is positive. In other words, the present study examines, in a comparative approach, how intangible elements in the studied economies are related to their innovation orientation and how that is reflected in the share of output that they export. In continuation we discuss the model and set the hypotheses. The hypothesised model is illustrated in figure 1.

Figure 1: *Proposed conceptual model*



3.1. Definition of intangibles and their interconnectedness

As there are different definitions for intangible capital, the literature provides different nomenclatures for its constituent elements as well. The variety of disciplines that are interested in studying intangibles (such as economics, organisation, strategy, management, finance, and accounting) as well as different participants (including academics, standard setters, professional bodies, government agencies, and consultants) has used a plethora of measurements and classification of intangible capital. But the most widely used classification (Roos, Pike & Fernström, 2005; Wall, Kirk & Martin, 2004; Sullivan, 1999; Tayles, Pike & Sofian, 2007; Marr, 2008), which we also employ in this study, is into these following three components: human capital (HC), structural capital (SC), and relational capital (RC). At a basic level, the conceptual separation of these three aspects of intellectual capital is evident from how each aspect accumulates and distributes knowledge differently: either through (1) individuals, (2) organizational structures, processes, and systems, or (3) relationships and market knowledge. In continuation we discuss these aspects separately. **Human capital** represents the individual tacit knowledge embedded in the mind of the employees. It has been identified as a foundational source of innovation, strategic renew-

al of a company, which can be used to realize and create value in the knowledge-based economy. According to the resource-based school of thought, human capital is recognised as an important source of competitive advantage and a firm's ability to adapt in volatile environments (Barney, 1991; Judge, Naoumova & Douglas, 2009).

We follow the definition used by Chen et al. (2004) who define human capital as a combination of employee's competence, attitude, and creativity. Examples of human capital elements are knowledge, expertise, skills, experience, competence, creativity, teamwork capacity, training and education, problem-solving capability, attitude, loyalty, and the motivation of people (Cohen & Kaimenakis, 2007; Hormiga, Batista-Canino & Sanchez-Medina, 2011; Hsu & Fang, 2009; Jacobsen, Hofman-Bang & Nordby, 2005; Johanson, 2005). The knowledge and know-how, which are created by and stored in its people, are central to creating the organizational capability to achieve the firm's strategic goals. Human resources and human resource management activities are strategically important because they are potentially valuable, rare, and difficult to imitate and substitute for. This, as Buller & McEvoy (2012) put forward, is particularly important when firms face competition based on possessing, communicating, and creating superior knowledge, human capital, and social capital versus having superior land, capital, or technology.

Intangible capital scholars have used different definitions and measures for the **structural capital**. Many of them refer to it also as organisational capital, and others - as *process capital* or *processes*. In general, among the identified indices for structural capital there are "soft" aspects such as the corporate culture, management processes, routines, support and cooperation between employees; share of knowledge; power and responsibility structure; and those that represent the non-human aspects of the structural capital, such as the institutionalized knowledge utilized through databases, manuals, structures, systems, and processes. And from an evolutionary perspective (Nelson & Winter, 1982), the structural capital is created, preserved, and enhanced through structured, repetitive activities. These include the company's structures and processes, or clearly mandated procedures and rules for retrieving, sharing, and utilizing knowledge.

In our study we define **structural capital** as the aspect of the intangible capital that deals with the mechanisms and structures of the organization that can help to support employees in their quest for optimum intellectual performance and therefore overall business performance (Chen et al., 2004). In order for the intellectual capital to reach its fullest potential, a company needs to have favourable systems and procedures in place. According to Chen, Chen & Hwang (2005), a company with strong structural capital will create favourable conditions to utilize human capital and allow to realize its fullest potential, and subsequently also boost customer capital (Chen et al., 2005).

Relational capital has been mostly used in literature to define the knowledge about customers and the relationships with them, and has been long known under the term of *customer capital* or *market capital*. However, the developments in the field of intangible capital has widened its definitional scope and has been referring to it as relational capital since (for example see Lynn, 1998; Choo & Bontis, 2002; etc.). Besides the organisation's

relationships with its customers, relational capital incorporates also relationships with other parties, such as suppliers, other companies in the market/industry, competitors, and different stakeholders where applicable (see Jacobsen et al., 2005; Marr, Schiuma & Neely, 2004; Payne et al., 1995; Roos & Roos, 1997).

There is already a pool of evidence that confirms that firms' market knowledge competences facilitate the design and development of innovative and successful products and have a positive impact on the overall firm performance (Hurley & Hult, 1998; Li & Calantone, 1998). That being said, in our study, we adopt the examples of relational capital stated above and follow Chen et al. (2004) definition of relational capital that Chen et al. (2004) put forward. According to them, relational capital is essential part of intangible capital and presents "the value embedded in the marketing channels and relationships that a company develops by conducting business". Market intensity, the ultimate expression of customer capital, refers to the current state of market building and its potential (Chen et al, 2004).

Interconnectedness of intangibles. Managerial activities related to intellectual capital should complement each other. Edvinsson & Malone (1997) point out that human, structural, and customer capital reciprocally circulate and affect each other. According to Chen et al. (2004), structural capital is subject to human capital, since human capital is a determinative factor of the organizational form. Moreover, structural capital and human capital enable enterprises to form, develop, and use innovation capital and customer capital in a coordinated way.

Hsu & Fang (2009) concede this reasoning positing that the collaboration of the elements of intellectual capital in generating knowledge value creates synergy. It is when human capital, structural capital, and relational capital complement and support each other, that intellectual capital will be most effective (Stewart, 1997). The higher the interactions among the IC components, the greater the effect on the performance of the intangible stock of a company (Chen, Zhu & Xie, 2004). This interconnectedness of the knowledge stock is also mentioned by Teece (1987), which Arrighetti et al. (2014) consider is the reason for the inverse relationship between the level of intangible assets a company possesses and the marginal costs of further investments in them (higher level of intangible assets is associated with a lower marginal cost of investing in the further extension of the asset stock, as argued by Knott, Bryce & Posen (2003))

In our study we examine whether there is a dynamism between the different aspects of the intangible capital and whether they have the potential to create value for the company. In that respect our model tests the following hypotheses:

Hypothesis 1: HC proxy variables are directly and positively related to SC proxy variables.

Hypothesis 2: HC proxy variables are directly and positively related to RC proxy variables.

Hypothesis 3: SC proxy variables are directly and positively related to RC proxy variables.

3.2. Intangibles and innovation⁵

To build upon the previous hypotheses, we emphasise that intellectual capital is more than simply the sum of the human, structural, and relational resources of the firm. But it is rather an indicator of how the knowledge of a firm is put to work in creating value for the organisation (Roberts, 1998). The different aspects of intellectual capital, both individually and jointly utilise the corporate knowledge which is essential for innovation. This conversion of the knowledge and its utilisation for new products and processes is the link between intangible capital and innovation.

Each of the aspects of intangible capital (in our model) is associated with the different types of knowledge within the company. The *tacit knowledge* is embedded in the expertise, know-how, and the experience of individuals (human capital); the *explicit* or *rule-based knowledge* is embedded in the corporate's internal processes, rules, and routines (structural capital); and the *relational* (sometimes called *cultural*) knowledge is expressed through the assumptions and beliefs used by members to assign value and significance to new information or knowledge (relational capital). To create knowledge, companies convert tacit to explicit knowledge, integrate and combine knowledge, and acquire or transfer knowledge across boundaries (Choo & Bontis, 2002). Or, as Nonaka & Takeuchi (1995) put it, in the process of new knowledge creation, the organization continuously converts the personal, tacit knowledge of individuals who develop a creative insight to the shared, explicit knowledge by which the organization develops new products and innovations.

Innovation is a collective achievement (Van de Ven, 1986) as companies assimilate and integrate knowledge by facilitating its communication, sharing, and transferring among individuals and by encouraging interactions in groups and networks (Allen, 1977). The intangibles in a company collectively determine its ability to rapidly respond to environmental change and achieve new and innovative forms of competitive advantage and superior performance outcomes (Teece, Pisano & Shuen, 1997).

From a strategic point of view, it is important that the intangibles that a company nurtures are strongly related to the company's strategic objectives. When a company identifies its critical intangibles, they become the key drivers to the value creation process of the firm. They embrace the core competencies of the company as well as the present abilities that the company possesses, or needs to leverage in order to attain those objectives (Canibano et al, 2001).

There is substantial evidence that intangibles that facilitate innovation are key determinants of firm competitiveness, value added, and growth (Sveiby, 1997; Ramezan, 2011; Kramer et al., 2011; González-Loureiro & Pita-Castelo, 2012). And since innovations essentially draw upon the knowledge deployed by such intangibles, finding an association between their various aspects and the organisation's innovation orientation would hardly be surprising. In our study we use the perception that CEOs hold about the importance

⁵ Some include innovation capital as part of the intangible aspects of a firm. However, as Chen et al. (2004) has pointed out, the origination and development of "innovation capital" are based on the conjoint effects of human, structural, and relational capital.

of innovation for the company as a proxy for innovation. Given that the proxy indicators consist of perceptual measures, the concept intrinsically reflects the strategic orientation of the management towards innovation. To examine the ability of the intangibles to contribute towards innovation, we examine the relation between each aspect of intangible capital and the innovation construct.

Hypothesis 4: HC proxy variables are directly and positively related to the innovation proxy variables.

Hypothesis 5: SC proxy variables are directly and positively related to the innovation proxy variables

Hypothesis 6: RC proxy variables are directly and positively related to the innovation proxy variables.

3.3. Intangible capital, innovation and export

Many poor countries has chosen to follow the export-led model of economic growth where external demand determines the dynamics of growth. Some countries - most of them in East and South-East Asia - have even achieved unprecedented rates of growth through exports. Others, on the other hand, have tried, but failed to follow the same route (The World Bank, 1993). The successful examples of export-led economic growth are the countries whose exporting sectors were national developmental priorities. These countries' competitive strengths were systematically developed (e.g. Japanese industrial policy) primarily by strengthening the manufacturing sectors (Grossman & Helpman, 1991; Boltho, 1996; Palley, 2011). An export-oriented manufacturing sector is crucial for building favourable internal environment and fuelling the external demand, which in turn have the potential to push the economic standards upwards.

The divergent success in building and maintaining an international competitiveness of countries, regions, and firms is directly related to their knowledge and intellectual capital (Edvinsson & Bounfour, 2004). In the context of the organisational learning idea, the intangible capital of a firm enables the knowledge acquisition, knowledge sharing, and knowledge utilisation within a firm. The knowledge acquisition and creation can be internal or external. Internal learning happens within the firm when through in-house research and development new knowledge is being generated and distributed. External knowledge generation (on which the industries of Albania and Republika Srpska predominately rely (World Bank, 2013a, 2013b)) involves the acquisition of new knowledge through observation and assimilation of external information (Bierly & Chakrabarti, 1996). In practice there may not be a clear distinction between internal and external learning, and some studies have suggested that for successful product innovation and attaining competitive advantage internal and external innovation need to be integrated (Iansiti & Clark, 1994). In that sense, for both technologically advanced and those less technologically advanced organisations, the key components that create and sustain competitiveness are (1) their intangible capital, and (2) the structure of the environment/market where they operate, which includes the pool of available knowledge, and the development level of the market (institutions, competitors, customers, etc.)

The innovation that is a product of the knowledge created and transformed by the intangible capital facilitates the development of competitive advantage of the company (Barney, 1991; Peppard & Rylander, 2001). International trade literature has found evidence that the more innovative companies are also more present in foreign markets (Wagner, 1996; Wakelin, 1997; Weifens et al., 2000; Griffith et al., 2006; Cassiman & Golovko, 2007) and they export more as they are better established on those markets. In the increasingly global world, innovation is the minimum necessary requirement for countries to be competitive. The examination of the link between innovation and export in our two models reveals insight whether innovation (created through knowledge transformation by the intangible capital) is sufficient for reaching competitiveness on the global market (hypothesis 7).

Hypothesis 7: Innovation proxy variables are directly and positively related to the export volume.

The above postulated hypotheses are represented with arrows in the conceptualised research model in figure 1.

4. METHODOLOGICAL FRAMEWORK⁶

The data used in our study was collected in a wider research project on intangibles in firms from the Western Balkans region. The psychometric questions that the survey consisted of are founded in theory. Additionally, the questionnaire was tested in each separate country in order to confirm its suitability.

The survey targeted the companies from the manufacturing and service sectors. The selection of the company was not random, but a stratified sample was composed based on size, industry and location. The surveys were conducted in the second half of 2010 in Slovenia and in the beginning of 2011 in Albania and Republika Srpska of Bosnia and Herzegovina. In total 198 (100 from Slovenia, 40 from Albania, and 58 from Republika Srpska) effective responses were collected, which amounts to an overall response rate of 22.4%.

4.1. Sample

The empirical analysis in this study focuses on the surveyed companies from the manufacturing sector in all three countries. The rationale behind this criterion is based on the idea that in our model examines radical innovation for which investments in R&D are key (Tether et al., 2002) and it is more likely that the manufacturing companies are engaged in more significant R&D. In that respect, the manufacturing subsample is deemed a more homogenous and relevant group of companies to include in our analysis. Table 2 provides the basic descriptive statistics of the samples, while the firms' characteristics according to the answered questions pertaining to intangible capital and innovation are shown in tables A2-A4 in appendix A.

⁶For a more detailed discussion about the survey and the measures used in the model, please refer to appendix A - Methodology, data collection and description

Table 2: *Structure of respondent companies*

<i>Region</i>	<i>Slovenia</i>	<i>Pooled*</i>
Number of respondents	(N = 73)	(N = 52)
<i>Size (Number of employees)</i>		
Small <50	7.4 %	50.9 %
Medium 50-100	16.7 %	32.1 %
Large >250	75.9 %	17.0 %
<i>Export orientation</i>		
More than 25%	77.8 %	37.7 %
More than 50%	72.2 %	17.0 %
<i>Other characteristics</i>		
Form: Ltd. vs. plc**	41 %	30.2 %
B2B (vs B2C)	56 %	37.7 %

* Pooled data set from the surveys in Albania and Republika Srpska of Bosnia and Herzegovina

** Limited liability company vs. Public limited company

4.2. Measures for the model variables

The primary data was acquired through a psychometric type of questionnaire distributed to senior managers and addressed the intangible investments and characteristics of firms. The proxy indicators for all of the intellectual capital elements in the model have been adapted from or developed on the foundations of innovation literature, strategic management, and literature on intangible capital and growth. The complete list of indicators is given in table A1 in appendix A.

The various aspects of intangible capital are not always found in companies in neat, separate “packages”. Out of the survey data we identified the indicators that were comparable in each of the geographic models and that proved adequate to capture the explanatory potential of the complex variables of the firms’ intangible capital. The proxies used in the models are shown in Table 3.

All of the latent variables in the model are first-order constructs. The latent variable *human capital (HC)* is constructed of four items i.e. proxies, which are evaluated on a dichotomous scale (yes = 1; no = 0). The managers were asked to state whether “the company provides regular on-the-job training”, and whether “the knowledge transfer is systematically induced among employees”. These two indicators refer to the investment in the relevant technical and professional knowledge of the employees. The other two proxies of human capital reflect the incentive practice that a company has in place for its employees. In that respect, the managers were asked to state whether “performance measure system can distinguish between different performing employees”, and whether the higher performing employees are differently rewarded than the average performers.

Structural capital (SC) is a construct whose proxies are also assessed on a dichotomous scale and include aspects related to the: management's influence in decision making, workers' participation in the workplace, the worker's participation in the risk-sharing, and their involvement in the decision-making process. The first two aspects correspond to what Chen et al. (2004) refer to as the organizational structure pertaining to the formal power relationships and control system. In that respect the respondents were asked to answer "do top managers and owners make strategic decisions unanimously", and whether there is "an established open dialog with the workers about key decisions for the firm". The remaining two aspects refer more to the less formal relationships pertaining to the work culture in the company and existing identification of employees' goals with those of the company. In that sense, respondents gave answers to the questions that asked whether "cooperation in different teams in individual department is a common form of workers' operation", and whether "workers engage in additional training for the good of the firm (not considering training organized by the firm)". The company's culture under the guidance of a favourable managing philosophy is a valuable asset. Only under the strong culture can a company give full play to its employees' competences and motivate them to serve the company and customer heart and soul. (Chen et al, 2004).

The proxies with which we measure the latent variable *relational capital (RC)* examine the firm's market knowledge competences and are assessed on a 5-point Likert scale. The respondents evaluate the company's competences in comparison with competitors (with 1 being "considerably worse than the main competitors" and 5 – "considerably better than the main competitors"). The set of measures include questions about company's knowledge about "customers' preferences and needs", "obtaining real time information about competitors", and establishing and managing long-term relations with both customers and suppliers.

Innovation (INN) is an endogenous latent variable and a function of the three latent variables of intangible capital. The model examines the relations between the different aspects of intangible capital and the 'perceived importance of radical innovation' as a proxy for the innovation variable. The indicators for the construct of innovation incorporated in our model are conceptualised as the significance that the managers place in different types of radical innovation for the company. There are two aspects that these measures reflect – the focus on radical innovation, and the importance with which senior managers perceive the different types of radical innovation.

In the context of the first aspect, we decide to focus on radical innovation given that our study analyses manufacturing companies (i.e. companies where R&D investments are most likely to occur, which is of key importance for radical innovations). And although both incremental and radical innovation are important for building and maintaining competitiveness, there is a closer linkage between long-term growth and radical innovation (Morone, 1993). Prašnikar & Kotnik (2006) in their study of technological leaders and followers further posit that as soon as a company develops new technologies, it ceases to be a follower and moves closer to the technological frontier.

The perceived importance of the different types of radical innovation, on the other hand, reflects the official strategic goals of the company related to innovation; it is an indicator of the management's innovation culture and aspirations. And while companies may or may not succeed in achieving their innovation objectives (which may be related to products, markets, efficiency, quality, or the ability to learn and to implement changes), the innovative activities may nonetheless have other or additional effects than those that initially motivated their implementation (OECD/Eurostat, 2005). Methodologically, it could be argued that capturing the objectives may have its flaws since actual effects may differ substantially from expectations. On the other hand, the effects of the (recent) innovation (output) may not be felt within the time period of the survey because of the lagging effect of innovation. Provided that our study relies on cross-sectional data, we opt for examining the objectives for innovation by measuring the perceived importance of radical innovations by the company's management.

The rankings placed in the different types of radical innovation are used as indicators of the strategic orientation of the firm in terms of innovation. In general, such examination may reveal whether the firm is engaging its intangible capital towards its innovative activities.⁷ The construct Innovation (INN) is built from three indicators of radical innovation, all measured on a three-point Likert scale. Respondents mark the relevance of the suggested types of new products (radical innovations) in the company from 1 = low to 3 = high.

The dependent variable *Export Volume (Export)* is measured by a dummy variable on the reported percentage of output that companies sell on foreign market. For the respondents in Albania and Republika Srpska of Bosnia and Herzegovina it has value 1 if company exported more than 25% of their products and 0 otherwise. For Slovenia, it has a value 1 if the company exported above 50% of its output and 0 otherwise⁸. The amount, or volume, that a company sells in foreign markets is an indicator of the success of the company's internationalisation through innovation and its external competitiveness, which are very important in any export-led economy.

⁷ Ajzen (1985) has demonstrated that the intention for action depends on one's belief and motivation. Organizations valuing innovation put structures and incentives in place to cultivate an innovative climate. By focusing on innovation (and perceived high importance of producing novel products), firms boost their competitive advantage and reinforce their market leadership during an economic crisis (Guellec & Wunsch-Vincent, 2009).

⁸ The different breakpoint level in the delineation between exporters and non-exporters used in the studied countries comes from the fact that Albania and Republika Srpska of Bosnia and Herzegovina are at the moment still much less export oriented than Slovenia. This reflects their considerably slower transition process due to political reasons, and hence, the slower firm restructuring and strategic reorientation. Consequently, the majority of firms in these countries are still operating primarily in domestic markets.

Table 3: Validated measurement items

Constructs	Item	Abbreviation
Structural capital	<i>Workers' participation in the workplace:</i> Is cooperation in different teams in individual department (not exclusively performing tasks in the same workplace) a common form of workers' operation?	CooperTeams
	<i>Workers' participation in decision making:</i> Is there an established open dialog with the workers about key decisions for the firm (workers have the right to information, giving suggestions, debate, protest)?	OpenDialogue
	<i>Workers participation in risk sharing:</i> Do workers engage in additional training for the good of the firm (not considering training organized by the firm)?	AddTraining
	<i>Management influence in decision making:</i> Did top managers and owners make strategic decisions unanimously in the last five years?	UnanDecMaking
	Does your company provide regular on the job training (e.g. apprenticeship, mentorship, job rotation)?	OTJTrain
Human capital	Do you systematically induce knowledge transfer among employees?	KnowTrans
	Do you measure performance in such a way that you can clearly distinguish between high and low performers?	MeasPerf
	Are better performers better rewarded for their work than average performers?	Rewards
Relational capital	Obtaining information about changes of customer preferences and needs.	InfoCust
	Acquiring real time information about competitors.	InfoComp
	Establishing and managing long-term customer relations.	LongtermCust
	Establishing and managing long-term relations with suppliers.	LongtermSupp

Constructs	Item	Abbreviation
Innovation	Extensions to existing product lines / services.	Extensions
	New product lines / services.	NewLines
Export volume	New products / services that are novelties also in global markets.	GlobalNovelties
	A dummy variable: 1 if the company exports above 50% (25% for the less developed economies) of its output, 0 if otherwise	Above50

5. RESULTS

5.1. Statistical technique

We analysed our theoretical model using structural equation modelling SEM, which identifies the simultaneous relationship between the variables in our model. Partial Least Square is a non-parametric SEM technique described as second generation multivariate analysis (Fornell, 1987). It is most suitable in studies with non-normal data, small sample size, and focus on prediction (Hair et al., 2012). It is also recognised as the most appropriate technique for relatively complex models, with low theoretical information, and when the measures are not well established. This method can also effectively manage the high number of variables in the model and the low possible causal relationships between the constructs (Longo & Mura, 2011). The basic PLS algorithm⁹ for reflective models is given below.

The estimation of inner relationships in the measurement model (weights of indices in a block for a latent variable) is given by:

$$v_{ji} = \begin{cases} \text{sign cov}(Y_j; Y_i) & \text{if } Y_j \text{ and } Y_i \text{ are adjacent} \\ 0 & \text{otherwise} \end{cases}$$

$$\tilde{Y}_j := \sum_i v_{ji} Y_i$$

while the structural equation for estimation of outer relationships of the structural model (path coefficients between latent variables) are the following:

$$y_{k_j n} = \tilde{w}_{k_j} \tilde{Y}_{j n} + e_{k_j n}$$

$$Y_{j n} := \sum_{k_j} \tilde{w}_{k_j} y_{k_j n}$$

⁹For further details and debate about the PLS SEM technique please see Lohmöller (1989)

The symbols used in the equations are explained below:

Variables:	Indices:
y = manifest variable (index)	$i = 1, \dots, I$ for blocks of manifest variables
Y = latent variable (construct)	$j = 1, \dots, J$ for latent variables
e = outer residuals	$k_j = 1, \dots, K$ for manifest variables counted within block j
	$n = 1, \dots, N$ for observational units

The analysis and interpretation of a PLS model is a two-stage process - first, the reliability and validity of the measurement model are evaluated, and then next the structural model is assessed and hypotheses are tested. This sequence ensures that the constructs' measures are valid and reliable before attempting to draw conclusions regarding relationships among constructs (Barclay, Higgins & Thompson, 1995). Thus, the measurement model in PLS is assessed in terms of individual item reliability, construct reliability, convergent validity, and discriminant validity. The complete model validation procedures are moved in appendix B.

5.2. Reliability and validity of the measurement model

We examine two similar models (for Slovenia and for the pooled data set of Albania and Republika Srpska of Bosnia and Herzegovina). We make a distinction between these two data sets because of two reasons. First, Slovenia is a more developed and more export oriented economy. The higher development level also impacts the behaviour and the structure of the companies and the importance of the intangibles for the organisation. On the other hand, Albania and Republika Srpska are similarly developed economies and share common issues at corporate level also with respect to the state and investments in intangible capital (see Prašnikar, Memaj & Redek (eds.), 2012; Prašnikar & Knežević Cvelbar (eds.), 2012). And second, by pooling the data for the two less developed economies, we increase the sample size which can lead to more reliable estimates. Taking into consideration their similarities, we feel that the increased sample and the estimation reliability outweighs the potential problems of country specific effects.

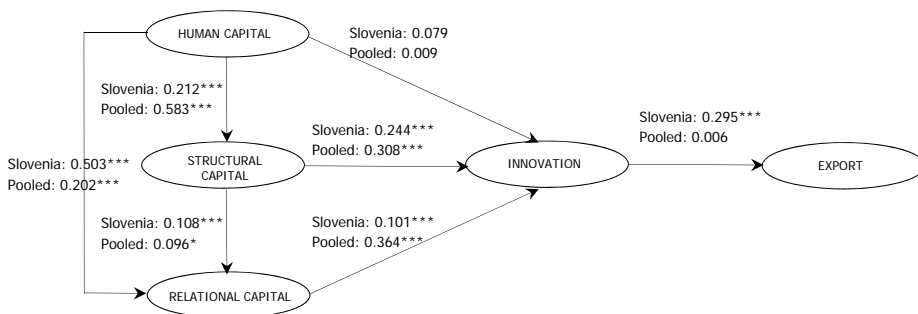
To establish factorial validity and reliability for the measurement model, we followed the PLS validation procedures outlined by Gefen & Straub (2005) (see tables B1 and B3 in appendix B). The complete procedure of model validation is moved to appendix B. Furthermore, given that the measures for the dependent and independent variables were taken from the same instrument, we perform four tests to overcome the concern of common method bias in the survey design. First, Harman's one-factor test was done to see whether one factor accounted for the majority of variance in the data (Podsakoff et al. 2003). Then the Pavlou, Liang & Xue (2007) test was used. Additionally, the latent variable correlations were examined (tables B7 and B8). Finally, a more rigorous test of common methods bias test suggested by Podsakoff et al. (2003) and adapted to PLS analysis by Liang et al. (2007) was performed. Common method bias is observed when a single factor emerges from

the analysis or when one general factor accounts for the majority of the covariance in the interdependent and dependent variables. As each of the principal constructs explained approximately equal variance, the data did not indicate common method bias. The results from the common method bias test are found in appendix C.

5.3. Hypotheses testing - results and discussion

Once unidimensionality, reliability, and construct validity for the measurement models were demonstrated, the structural model fits and proposed hypotheses concerning the main and mediating effects were tested. In particular, this study tests the relationships between the elements of intellectual capital in the samples of manufacturing firms and the relationship between each of them with the innovation attitudes of the managers, and consequently, the link between innovation and the volume of export of these firms. The results of our theoretical model testing are depicted in Figure 2.

Figure 2: Results*



*'Slovenia' values provide the result obtained from the sample of manufacturing firms in Slovenia, while the 'Pooled' values provide result for the combined sample of manufacturing firms from Albania and Republika Srpska of Bosnia and Herzegovina.

The hypotheses pertaining to the interrelatedness of the IC dimensions were found to have significant positive effect in both of the models. Namely, we find that human capital positively affects both structural and relational capital, thus supporting the hypotheses **H1** and **H2**. Structural capital, innovation capital, and relational capital are affiliated to human capital. On one hand, human capital can convert knowledge into market value by converting the other three capitals. On the other hand, human capital can determine the operational forms of the other three capitals and by that convert immaterial knowledge and information into material output and benefit (Chen et al., 2004).

In the case of Slovenian manufacturing firms, the human capital was shown to have largest significant impact on the relational capital (β 0.503; $p < 0.001$). This may be suggesting that the processes in the Slovenian companies are more focused to translating human capital into market-related capital, as it is more important for maintaining the competi-

tiveness in their more developed and diversified markets. While in the case of the pooled dataset from Albania and Republika Srpska, the human capital is more heavily related to the structural capital (β 0.583; $p < 0.001$), which reveals the cultural and institutional significance of the nature of their structural capital that is important for companies from these two countries¹⁰. The results show that, as expected, the indicators for the construct human capital are closely related to the 'softer' aspects of the structural capital in the firm i.e. the culture and the processes. The human capital has a transient nature and organisations are encouraged to, wherever possible, convert it to structural and relational capital. By doing so, i.e. moving from human capital to structural and relational capital, the embedded knowledge will become more independent of people. It will consequently remain based in organizational systems, structures and technologies and, thus, become potentially easier to control. Our path analysis confirms that this process is more pronounced in the Slovenian companies, which in its own suggests that these are more innovative, better-learning, more competitive companies. With this type of knowledge creation (by converting it from one kind to another) they bridge the gaps in the organization's existing knowledge which can stand in the way of solving a problem, developing a new product, or taking advantage of an opportunity (see Choo & Bontis, 2002).

Additionally, the literature suggests that that human capital significantly affects customer i.e. relational capital in all industries (e.g. Bontis, Keow & Richardson, 2000). Higher quality employees were shown to be more skilled in acquiring, distributing, and utilising more information regarding customers and business partners towards building long-term relationships with them. In other words, human capital positively affects relational capital (Hsu & Fang, 2009). The relation between structural capital and relational capital (**H3**) is somewhat weaker, but nonetheless significant in both models (β 0.108; $p < 0.001$ and β 0.096; $p < 0.005$ respectively).

The hypotheses **H4**, **H5**, and **H6** are considering the effects of the three intellectual capital dimensions (SC, HC, RC) on the perceived importance of radical innovation in the company. In Slovenia, the structural capital has the most significant impact on innovation (β 0.244; $p < 0.001$), while in the pooled case (Albania and Republika Srpska of Bosnia and Herzegovina), the relational capital had strongest impact on the perceived importance of innovation (β 0.364; $p < 0.001$).

The different aspects of intellectual capital accumulate and process knowledge differently. Therefore it is possible that each of them and their interrelationships may influence the company's innovation in different ways. We tested the mediating effects of the constructs structural capital and relational capital on the influence of human capital on innovation. The estimated paths in the case of Slovenia indicate a mediation effect of human capital on innovation. The performed bootstrapping reveals a full mediation when the intervening construct is structural capital and a partial mediation when the intervening variable is relational capital in both models. The assumptions behind the tested mediation are in

¹⁰ Companies where there is collaboration between owners and managers are more oriented towards value-enhancing activities (Aoki, 2010; Prašnikar et al., 2014).

the expectations that companies that are actively engaged in training their employees (and encouraging learning and knowledge sharing) also encourage learning and innovative cultures. Furthermore, employee abilities affect firm's relations to outside parties, and contribute to ideas and knowledge assimilation. The latter can be later enmeshed in the innovation processes.

Table 4: *Path estimates – path coefficients and t-values*

Hypothesis	Slovenia		Pooled	
H1: HC → SC	0.212	(4.265)***	0.583	(20.773)***
H2: HC → RC	0.503	(12.762)***	0.202	(3.979)***
H3: SC → RC	0.108	(2.465)***	0.096	(1.725)**
H4: HC → INN	0.079	(1.374)**	0.009	(0.182)
H5: SC → INN	0.244	(1.697)**	0.308	(6.684)***
H6: RC → INN	0.101	(3.972)***	0.364	(7.626)***
H7: INN → Exp	0.295	(6.875)***	0.006	(0.119)

***p<0.001

**p<0.05

Finally, we examine the relation of the innovation construct to firm's export orientation (H7). In the case of Slovenia, the link is positive and significant (β 0.295; $p < 0.001$)¹¹, while in the pooled case (Albania and Republika Srpska of Bosnia and Herzegovina), it is insignificant. These results are in line with the findings of Prašnikar et al. (eds.) (2012) and Prašnikar and Cvelbar Knežević (eds.) (2012) in the studies of intangible capital in Albania and Republika Srpska of Bosnia and Herzegovina, respectively. The study on the intangible capital in Albania revealed a predominant inward orientation of the companies and focus on the domestic market. Those Albanian companies that do compete in the global markets exploit their cost competitiveness. Similarly, the study in the Republika Srpska found that most of the (manufacturing) companies are very marginally present elsewhere but at home. This inward orientation, may be limiting the learning opportunities that the more developed and more competitive markets offer. On the other hand, Slovenian companies are very export oriented. A large proportion of Slovenian exports is destined for the highly competitive EU-15 markets (Damijan, Kostevc & Polanec, 2011), and this increases the scope for benefits from either positive spill-overs in the exporting markets or by raising the innovation of exporting firms (learning-by-exporting). Although the reverse relationship between exporting and innovation is beyond the scope of our empirical analysis, the results in the present study show a significant path-coefficient between the constructs innovation and export volume within the Slovenian sample.

The results of the study show that although there is an indication that there is some investment in intangible assets present in the manufacturing companies of Albania and Re-

¹¹ As confirmed by Domadenik, Prašnikar, & Svejnar (2008) for a study made on a Slovenian sample, companies whose management was more R&D oriented, were more likely to be more innovative in the longer term, more productive and, thus more competitive.

publika Srpska, it is only a part of the story behind the restructuring and the growth of these two developing economies. First, the Western Balkan countries lack the capacities to undertake scientific and applied industrial research, and to transfer, adapt and assimilate new technologies into economic structures and diffuse them into society (World Bank 2013a, 2013b). And second, the lack of exports is a serious threat to future development, alongside the low competitiveness, relatively high public debt, and the consequent current account deficit (EBRD, 2011). Therefore, the national efforts in these economies should be directed towards strengthening of their research and innovation capacity, which in turn will increase their competitiveness on the global market.

In conclusion, the estimated paths from our hypothesised models confirm not only the interconnectedness of IC elements, but also support the hypotheses about their contribution to the innovation culture in the firm. This is important since the corporate strategy guides the entire organisation and identifies the path that all departments and functions need to pursue (Alcaniz, Gomez-Bezarez & Roslender, 2011). The literature agrees that the intellectual capital resources are often performance drivers¹² and, hence, there must be a causal relationship between those resources and value creation. They must be interrelated to create more value (Marr, 2005). Our analysis confirms not only that there is a positive relationship between the elements of intellectual capital and innovation, but also that there is a positive relationship between innovation and the export volume of the firms. The latter linkage, however, holds only for the Slovenian manufacturing companies, which corroborates previous findings that the most innovative Slovenian firms are exhibiting global competitiveness, exporting to a number of global markets (not only the proximity markets of ex-Yugoslavia, but EU and outside of EU markets (Prašnikar et al., 2012)).

The insights from the intangible capital literature show that key factors in acquiring and utilising knowledge in a company are its investments in different types of intangibles. The sequential theory of internalisation, on the other hand, holds that the internationalisation process is a path dependent learning process in which the acquisition of knowledge and the commitment of resources are fed back mutually (Andersen, 1993). In that respect, firms go through a gradual process in acquiring knowledge through their own experience, and as they begin competing on foreign markets, they do so in a gradual way, first in countries culturally and geographically close to the country of origin (Johanson & Vahlne, 1977; Davidson, 1980; Benito & Gripsrud, 1992) and subsequently in other countries. This learning process will be, of course, additionally influenced by the development of the markets where the companies export. For a sample of Slovenian companies, De Loecker (2007) and Damijan & Kostevc (2006) find that, by exporting to advanced markets, firms can learn more due to the higher quality, technical, safety and other standard requirements of those markets, as well as due to the tougher competition. In that sense, the West-

¹² It is interesting to note that this is not the first time a direct link has not been observed between a construct of human capital and performance, and that the main relation that explains the dependent variable (innovation) is the relation human capital – structural capital. This was also found in a similar study by González-Loureiro & Pita-Castelo (2012) on 140 innovative SMEs from Galicia, Spain. In their case the dependant variable was the firm's marketing performance (a composite variable of turnover and value added). This occurrence speaks in favour of the higher impact of transformed knowledge (for which a well-established knowledge creation mechanism needs to be in place) on the company's success.

ern Balkan economies, have the potential to eventually, by following the Slovenian path of economic development, become more competitive in the global market.

6. CONCLUSION

6.1. Contributions and limitations

Our study contributes to the existing literature in several ways. First, it represents a contribution towards the IC valuation models (cf. Sveiby, 2001) in a way that we are able to calculate measures of the different aspects of intangible capital (human capital, structural capital, and relational capital) in the developing economies from the Western Balkans and Slovenia using an original data set, which represents a novelty. Furthermore, we relate the intangibles present in the manufacturing firms to their innovation and consequently to their export intensity, which is a first empirical study of its kind to explore these links on data from these countries. Additionally, exploring the linkage in a comparative study between the Western Balkans (Albania and Republika Srpska of Bosnia and Herzegovina) and the European Union (Slovenia), this study offers additional insights to policy-makers and practitioners as well.

Using a unique dataset of firm-level data, the paper is extending the knowledge on innovation, corporate behaviour, and competitiveness in foreign markets through the volume of export. The results support the idea that the relationship between the IC components affects innovativeness in technological-follower companies, but reveal a divergent effect of the innovation proxy measures to the volume of export in the different data sets. Clearly the capacity to innovate is closely related to the firm's intangible capital (the ability to transform and utilise knowledge for the purposes of innovation). But the international literature recognises that the export behaviour of firms is influenced by a mix of different factors. These factors range from structural ones (size, R&D intensity etc.), through management factors (attitudes towards risk, education of decision makers, etc.) to, finally, incentives and obstacles in the process of internationalisation (competitive pressure, negative domestic trends, availability of information, etc.). As the companies we analyse come from economies that differ with respect to endowments in terms of labour, capital, and the stock of knowledge, these aspects influence the level of their innovation, and consequently its contribution to the level of competitiveness on foreign markets.

The differences between countries in innovation levels also reflect the efficiency of their respective national innovation systems, i.e. the producers, users, suppliers, public authorities and scientific institutions that constitute them. It is the interaction between the actors on the market, and in general, of the innovation system, that results in new and commercially useful knowledge. Therefore, it is very important to make the distinction of the different institutional, economical, and technological settings where innovation can thrive and recognise that there are different innovation processes in technological followers and technological leaders. Only in that way we could hope to gain deeper understanding of the phenomenon and its potential to push the economy up.

Policy-makers around the globe have recognised investments in intangible capital as a major driving force behind the ‘new economy’ growth model. The successful stories of Asian and European economies have demonstrated that own product development, and global market penetration with innovative products and own brands are key to ensuring stable growth. The current low value-added exports that represent the majority of exports of the Western Balkan manufacturing companies is a strategy that lacks the potential to bring sustainable competitiveness in foreign markets. A previous study (Prašnikar & Knežević Cvelbar, (eds.) 2012) shows that companies that invest more in intangible assets are on one hand more export-oriented and on the other hand (seemingly paradoxically) less productive than companies oriented towards the domestic market. But the lower productivity of export-oriented firms is in fact an indicator of the superior competition in the global market. On the other hand, high productivity in domestic markets reveals the lack of competition at home and consequent higher economic rents. Therefore, the increasing openness of domestic markets will further increase competition and lower these, momentarily high, rents. Continuous investment in intellectual capital and innovation are the only long term solution to growth.

Furthermore, the present study generates a number of practical implications for the study of global competitiveness of the companies in the technology-follower countries. From practitioners’ point of view, the study proposes measures for human, structural, and relational capital in the manufacturing companies. By measuring, reporting, and managing their intellectual capital effectively, companies can improve their competitive advantage. It is by identification of all the assets at their disposal (tangible and intangible), that companies will be able to operate at their full potential by making maximum use of their asset pool. Appropriate management activities in that direction can create new knowledge sources or, improve the value of existing ones.

The study faces some limitations, mainly pertaining to the sample size and thus generalisation of the results. First, given the non-random sample from the population of larger firms in Albania and Republika Srpska of Bosnia and Herzegovina, the results should be interpreted bearing this caveat in mind. Additionally, a larger sample size could improve the predictive accuracy of the models, and contribute to more robust estimates. Future studies can also benefit from an extension of the sample that would incorporate other industries and economies from the Western Balkans, which would provide broader generalization of the obtained results. Finally, the present study relies on cross-sectional data, which limits the examination of the causality between the variables. Therefore, a repeated (longitudinal) study is one of the more important future challenges.

Overall, given the good fitting of the models, we feel that this study offers some insights from environments with very poor and even deteriorating national support and policies for human development, as well as national innovation systems, and puts them vis-à-vis the perspective from a more developed “neighbour”. With that, the present study paves the way for future studies that would examine the role played by the intangible factors in these economies and how their effectiveness is affected by the other productive inputs and by environmental factors.

6.2. Conclusion

The paper examines the relation between the intangible capital (human, structural, and relational capital), innovation, and export orientation in the manufacturing sector. Using a unique survey data set on Slovenia, Albania, and Republika Srpska of Bosnia and Herzegovina, we propose two theoretical models that reveal the relevance of the IC elements in two different settings: a pooled model of a sample of manufacturing companies from Albania, and Republika Srpska vis-à-vis a comparable Slovenian model.

The results seem to highlight that the human capital is the basic starting point in knowledge creation in the firms as the estimated paths show that it positively affects both, structural capital and relational capital, and that, consequently, structural capital positively affects relational capital. The main link for explaining the high importance of innovation, however, is the HC – SC relationship. This is in-line with the resource-based view of firms, where human capital is recognised as the primary important source of, both firm's competitive advantage as well as its ability to adapt to volatile environments (Barney, 1991; Judge et al., 2009). Subsequently, many researchers identified the firm-specific human and structural resources as the largest subcategory of businesses' intangible investments (Van Ark et al., 2009, for US and UK; Fukao et al. 2009, for Japan; Bloom & Van Reenen, 2010).

The results from the estimated models reveal that the manufacturing firms in Albania and Republika Srpska of Bosnia and Herzegovina possess intangible capital and that the elements that it is consisted of can be, in fact, measured. However, this is only the first step towards building competitiveness on foreign markets, as these companies have still very limited export orientation (which was confirmed by the insignificant link between the innovation (as a function of the intangible capital) and the export volume variable. Unlike the pooled model, Slovenian companies are exporting more heavily, which implies their higher competitiveness and success on the global markets.

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APPENDIX A – METHODOLOGY, DATA COLLECTION AND DESCRIPTION

The data used in our study was collected in a wider research project on intangibles in firms from the Western Balkans region¹³. The main purpose was to address the conceptual and applicative issues that current empirical studies on intangible capital and innovation in developing economies face (Aralica et al., 2008; OECD/Eurostat, 2005; Mytelka et al., 2004; Mairesse & Mohnen, 2010). The conceptualisation of the questions, which indicators we deemed appropriate to for constructing the latent variables in our model(s) are founded in theory.

Human capital measures

The human capital and motivation indicators concern the internal corporate **training** practices and policies, as well as the on-the-job training. The questions aim to identify the company's intention to make collaborative efforts by asking about the provision of organised training based on identified needs of the company. Next, the questions establish the firm's dedication to measuring the effects of training. Firms that also measure training effectiveness with other methods, rather than solely by conducting a survey at the end of a training programme, are considered more dedicated. The questions examining the **on-the-job training** aim to identify whether the company actually provides regular on-the-job training (e.g. apprenticeship, mentorship, job rotation etc.) and if it actively promotes spreading knowledge among its employees. If a firm considers on-the-job training an important factor in the promotion of key employees, it will foster successors for most of its key employees, allowing for quick and efficient replacements. As put forward by Chen et al. (2004), human capital is the foundation of the companies' intangible capital, and refers to such factors as "employees' knowledge, skill, capability, and attitudes in relation to fostering performances which customers are willing to pay for and the company's profit comes from".

Structural capital measures

The proxies for measuring the latent variable structural capital include management's influence on decision-making, the workers' participation in risk sharing, workers' participation in decision-making, and their role in the workplace. These were measured through adapted psychometric questions, developed and tested by Bloom & Van Reenen (2007). They are organised in cascading set of closed questions, an approach first used by Miyagawa et al. (2010)¹⁴.

¹³ For more details on the comprehensive survey on intangible capital in the developing countries of the Western Balkan, please see Prašnikar et al. (eds.) (2012) and Prašnikar & Knežević Cvelbar (eds.) (2012).

¹⁴ The cascading approach directs respondents to a systematic way of thinking about the actual situation in the organisation without being biased or thinking too broadly about it. It also increases the reliability of the data by using a set of three simple and clear consecutive 'Yes/No' statements. Each consecutive statement in a question set represents a greater degree of complexity of the selected phenomenon, building into a cascading structure, and also allowing empirical testing (more in Prašnikar et al., 2014).

The proxies for the **management's role in decision-making** examine the "power and responsibility in the managing process" (Cheng et al., 2004), or the use of existing resources belongs to managers. The separation of strategic functions (given usually to top management) and day-to-day decisions (which are usually in the hands of middle and lower management) reveals the level of cooperative behaviour of the corporate governance. The literature explains that employee involvement in decision-making may foster the elimination of post-contractual information asymmetry (Freeman and Lazear, 1995), increase investments in human capital (Furubotn, 1988; Furubotn and Wiggins, 1984) and enable the controlling owners to pursue **value-enhancing quality management and innovative strategies** (Kraft, Stank& Dewenter, 2011). This power and responsibility structure is according to Chen et al. (2004) one of the expressions of structural capital.

The questions on **workers' participation in risk sharing**, examine the willingness of employees to do "something more" for the firm, or whether they would voluntarily, outside their working hours, invest themselves in the benefit of the company. Further, questions from this section of the questionnaire examine the workers' long-term personal vision within the company; their "loyalty" towards the firm reflected through their willingness to stay with the firm even if they had been offered better (paid) employment elsewhere, and lastly their propensity to financially participate in the firm and take financial risks. The **workers' participation in the work place**, or the internal cooperation, is examined by questions on the nature of the corporate processes and whether they encourage work in groups; whether it is common for teams to cooperate within same departments, as well as interdepartmentally. These aspects reveal the on one side the softer properties of the structural capital, the organisational culture, reflected through the employees' attitude about themselves and the firm (Chen et al., 2004). "Company culture under the guidance of a favourable managing philosophy is a valuable asset. Only under the strong culture can a company give full play to its employees' competence and motivate them to serve the company and customer heart and soul."

In order to study the effect of **workers' participation in the decision-making** process on firm performance, the survey categorises this participation into levels or degrees. Clarke, Roberts, & Fatchet (1972) distinguishes between participation concentrated on work tasks (work-centred participation) and participation concentrated on the distribution of power (power-centred participation). This set of questions are modelled according to Bernstein (1982), who distinguishes between different degrees of workers' control, and namely: employee consultation, which represents the lowest degree of participation, where workers merely provide written or oral suggestions to management, which can choose to ignore or act on them; employee co-influence, which involves discussions between workers and management, where workers have the right to be informed, discuss their interests, protest, and offer suggestions, but management still makes the final decision; and joint management, or co-determination, where both parties have the right to veto decisions and form joint decision committees. The most advanced degree, self-management, which enables full participation of all members of the firm, with workers having total control over the decision-making process, was left out from the questionnaires, given that the Republika Srpska of Bosnia and Herzegovina and Albanian normative frameworks do not support

workers' participation. The first question, 'Are workers informed about key decisions for the firm?' reflects employee consultation. The second question, 'Is there an established open dialogue with the workers about key decisions for the firm?' expresses employee co-influence. The last question about workers being members of governing bodies includes joint management or codetermination.

The above described indicators are inline with Chen et al. (2004) definition of structural capital according to which this concept deals with the system and structure of a company. They postulate that a company "with strong structural capital will create favourable conditions to utilize human capital and allow human capital to realize its fullest potential, and then to boost its innovation capital and customer capital".

Relational capital measures

The innovation questionnaire of the survey on intangible capital in developing countries is heavily based on the Community Innovation Survey (CIS), but adapted to capture the specifics of the innovation activities in technology follower countries. The adaptations in the innovation questionnaire follow the recommendations from the literature on innovation surveys (OECD/Eurostat, 2005; Mytelka et al., 2004; Mairesse & Mohnen, 2010). The indicators we derive to build the latent construct of relation capital in their core examine the firm's market knowledge competences. The four proxies are measured on a 5-point Likert scale where CEOs evaluate their company's competences in comparison with competitors (from 1 - considerably worse than the main competitors to 5 - considerably better than the main competitors). The set of questions include information on company's knowledge about customers' preferences and needs, about competitors, and establishing and managing long-term relations with both customers and suppliers.

Innovation measures

Technical innovation (product and process innovation) is the most used measure for innovation in companies from the manufacturing sector, which is the type of companies our sample consists of. The proxies we looked into for measuring the construct of innovation in our structural models are conceptualised as opinion on the relevance on the different types of innovation for the company. This question was added in the CIS based questionnaire and was the measures were adapted from the survey used by Rajkovič (2011). Given that this survey was prepared to address the needs of measuring innovation in technological followers (see Prašnikar, Redek & Drenkovska, 2014), it acknowledges the importance to determine not only whether there have been new products introduced by the company, but also the significance that a particular type of innovation holds for the company in terms of competitiveness and it technological (and organizational complexity). CEOs were asked to rate the following types of innovations on a 3-point Likert scale where 1 means low relevance and 3 means high relevance: repositioning; improving existing products; extensions to existing product lines; new product lines. The first three types represent incremental innovations, while the last three – radical innovations.

Table A1 lists the items we selected and tested as measures for the intangible constructs in the hypothetical model.

The survey conducted in the three economic entities also collected data about individual characteristics of the surveyed firms, such as export orientation (share of revenues made abroad), ownership type (state or private, domestic or foreign, and dispersed or concentrated), industry (service or manufacturing), and legal form (limited liability company or joint stock company). In each country, we pilot-tested the questionnaire in order to confirm its suitability. During the process we asked managers to complete the questionnaire and indicate any ambiguity in the phrasing of questions.

Sampling and data collection

The questionnaires were mainly sent by post to the CEO's and/or senior managers in charge of corporate R&D, HR, and other relevant departments as they possess comprehensive operational and strategic knowledge on firms, which was required by the questionnaire. The initial correspondence included a covering letter that explained the purpose of the research and provided assurance of anonymity and confidentiality. Subsequently, the managers were contacted by phone and, referring to the covering letter were, were notified that a questionnaire will be sent on their email account. Once the postal questionnaires were sent, detailed follow-up where necessary was conducted, by phone, or email one week later.

The questionnaires in Slovenia were administered to the 400 largest Slovenian firms, which constituted the country's entire population of firms with 100 or more employees from the manufacturing and the service sector.

The surveys in Albania and Republika Srpska of Bosnia and Herzegovina were conducted with the assistance of the research teams from the University of Tirana, and the University of Banja Luka, respectively. The surveys were conducted in two waves for both the companies from the manufacturing industries and the companies from the service industries. The start of the survey in Slovenia was the autumn of 2010, and for Albania and Republika Srpska of Bosnia and Herzegovina - the beginning of 2011. Each wave of the survey was separated by three to four weeks. After the completion of the survey, 198 (100 from Slovenia, 40 from Albania, and 58 from RSBiH) effective responses were collected, amounting to an overall response rate of 22.4%.

Sample descriptions

The Slovenian sample finally consisted of mainly companies from the manufacturing sector (77%), while the rest were service companies. Two thirds of them (66%) exported at least 20%, while 59% exported at least half of products in the observed period. In terms of employment, the sample consists of 40 medium-sized companies (50-249 employees) and 54 large companies (250 employees or more). Over the entire period, the average company had 603 employees. About half of companies (52%) reported the domestic and/or Western Balkan markets as their main market, while the rest sold the majority of their products to the EU and other foreign markets.

The Albanian sample consists of 12 joint stock companies and 28 companies with limited liability. Some 25% (10 companies) are from the construction industry, 37.5% (15 companies) are from the manufacturing sector, while 37.5% are from the tertiary sector: 15% (six companies) are from trade and 22.5% (nine companies) are from service activities other than trade. The sample also justly represents the size structure. The average company in the sample employed 148 people in 2010.

Among the respondents from the Republika Srpska of Bosnia and Herzegovina sample 61.4% were manufacturing firms the sample, 22.4% are state-owned firms, 15.5% are owned by foreigners, and 94.8% had concentrated ownership. In 2011, they generated 8.7% of total income and employed 5.4% of employees among all firms registered in Republika Srpska of Bosnia and Herzegovina.

Table A1: *Complete list of indicators for measuring each intellectual capital (IC) element in the theoretical model (as obtained from the questionnaire)*

Constructs	Item	Abbreviation
Structural capital Management's influence on decision-making	Is the decision making process about strategic questions of the firm separated from the operational decision making process at different levels of the firm?	DecMakingSep
	Did top managers and owners make strategic decisions unanimously in the last five years?	UnanDecMaking
	Are the basic strategic decisions in the firm coordinated among owners, managers and workers?	CoordDecMaking
	Are most of workers prepared to do "something more" for the firm?	SmtMore
Structural capital Workers participation in risk sharing	Do you believe most workers would stay with the firm even if they were offered better employment somewhere else (for example if they were offered a better paid employment)?	StayInFirm
	Are most workers willing to accept a part of business risk (for example financial investment in the firm or deferred payment in the case of profit sharing)?	AcceptRisk
	Do workers engage in additional training for the good of the firm (not considering training organized by the firm)?	AddTraining
Structural capital Workers' participation in the workplace	Is there a great need for workers to work in work groups because of the nature of the work processes?	WorkInGroups
	Is cooperation in different teams in individual department (not exclusively performing tasks in the same workplace) a common form of workers' operation?	CooperTeams
	Is there a strong presence of workers' cooperation between different departments and forming of interdepartmental teams?	CooperDepart

Constructs	Item	Abbreviation
Structural capital Workers' participation in decision making	Are workers informed about key decisions for the firm (workers have the option of giving comments that are then regarded or not.	InfoKeyDecis
	Is there an established open dialog with the workers about key decisions for the firm (workers have the right to information, giving suggestions, debate, protest)?	OpenDialogue
	Are the workers' representatives in your firm members of the governing bodies (for example the supervisory board and its comities) and are involved in the decision making process?	RepresGovern
Human capital and motivation Training and knowledge transfer	Does your company provide organized training of your employees based on identified needs of the company?	OrgTrain
	Do you involve more than half of your employees in your training programs annually?	MoraHalf
	Do you measure training effectiveness with other methods than conducting a survey at the end of a training program?	MeasTrain
	Does your company provide regular on the job training (e.g. apprenticeship, mentorship, job rotation)?	OTJTrain
	Do you systematically induce knowledge transfer among employees?	KnowTrans
	Do you have successors for most of your key employees, so that they could effectively take on their positions in a short period of time?	Successors
	Do you measure performance in such a way that you can clearly distinguish between high and low performers?	MeasPerf
	Are better performers better rewarded for their work than average performers?	Rewards
Human capital Motivation	Do you apply any other warning sign than oral reprimand for low performers to let them know of their substandard performance?	Warning
	Is goal-setting a part of you set of leadership practices?	GoalSetting
	Are individual goals set for more than half of your employees?	IndGoalSetting
	Do you systematically measure if goal-setting is contributing to improved performance for the majority of your employees?	MeasGoalSetting
	Do you provide regular performance feedback to your employees?	PerfFeedback
Do you conduct annual performance-review meetings for at least key employees?	PerfMeetings	
Are annual performance-review meetings conduced effectively and thus significantly contribute to improved performance?	ImproPerf	

Constructs	Item	Abbreviation
Relational capital	Obtaining information about changes of customer preferences and needs.	InfoCust
	Acquiring real time information about competitors.	InfoComp
	Establishing and managing long-term customer relations.	LongtermCust
	Establishing and managing long-term relations with suppliers.	LongtermSupp
Radical innovation	Mark the relevance of the following types of new products in your company: Extensions to existing product lines / services.	Extensions
	Mark the relevance of the following types of new products in your company: New product lines / services.	NewLines
	Mark the relevance of the following types of new products in your company: New products / services that are novelties also in global markets.	GlobalNovelties
Exporting volume	A dummy variable: 1 if the company exports above 50% (25% for the less developed economies) of its output, 0 if otherwise	Export

Table A2: *Intellectual Capital in firms (% that answered positively)*

	Slovenia (N = 73)	Pooled (N =52)
Question		
Management's influence on decision-making		
The decision making process about strategic questions of the firm as a whole is separated from the operational decision making process at different levels.	81 %	70 %
Top managers and owners unanimously reach strategic decisions.	73 %	60 %
The basic strategic decisions are coordinated among owners, managers and workers.	63 %	45 %
Workers' participation in risk sharing		
Most workers are prepared to do "something more" for the firm	89 %	81 %
Workers engage in additional training (apart from training organized by the firm)	70 %	64 %
Most workers would stay with the firm even upon being offered better conditions elsewhere	59 %	45 %
Most workers are willing to accept a part of the business risk (e.g. financial investment in the firm or deferred payment)	26 %	25 %
Workers' participation in the workplace		
There an increased need for workers to work in work groups given the nature of the work processes	90 %	n/a
Cooperating in different teams within individual departments is common	77 %	n/a

Question	<i>Slovenia</i> (N = 73)	<i>Pooled</i> (N =52)
There is a strong presence of workers' cooperation between different departments which results in interdepartmental teams	68 %	n/a
Workers' participation in decision making		
Workers are informed on key decisions	92%	60%
There is open dialog with the workers regarding key decisions for the firm	84%	51%
There are workers' representatives in governing bodies and are involved in the decision making process	55%	25%
Human capital and motivation – learning		
The company provides regular on the job training	99%	68%
The company systematically induces knowledge transfer among employees	81%	75%
There are successors for most of the key employees	38%	66%
Human capital and motivation – performance		
Performance is measured in such a way that you it clearly distinguishes between high and low performers	90%	87%
Better performers are better rewarded than average performers	93%	94%
Low performers are given different warnings (other than oral reprimand)	64%	83%

Table A3: *Relational capital in firms (means and standard deviations)*

Question	<i>Slovenia</i> (N = 73)		<i>Pooled</i> (N =52)	
	mean	s.d.	mean	s.d.
Relational capital *				
Obtaining information about changes of customer preferences and needs	3.00	0.85	2.98	1.57
Acquiring real time information about competitors	3.14	0.82	2.98	1.42
Establishing and managing long-term customer relations	3.60	0.92	3.09	1.62
Establishing and managing long-term relations with suppliers	3.52	0.93	3.23	1.69

*Measured on a Likert scale between 1 and 5 (1 - considerably worse than the main competitors to 5 - considerably better than the main competitors)

Table A4: *Importance of radical innovation in firms (means and standard deviations)*

Question	<i>Slovenia</i>		<i>Pooled</i>	
	(N = 73)		(N =52)	
Relevance of types of new products *	mean	s.d.	mean	s.d.
Repositioning of existing products on the market	1.88	0.98	1.57	1.20
Improving existing products	2.53	0.70	1.94	1.21
Extensions to existing product lines	2.10	0.77	1.72	1.66
New product lines	2.08	0.99	1.57	1.20
New products that are novelties also in global markets	1.26	1.14	1.15	1.21

*Measured on a Likert scale between 1 and 3 (1-low relevance, 2-medium relevance, 3-high relevance)

APPENDIX B – MODEL VALIDATION

Table B1: *T-statistics for Convergent Validity: Slovenia*

Construct	Indicator	T-statistic
Human Capital	OTJTrain ←HC	8.185**
	KnowTrans ←HC	14.989***
	MeasPerf ←HC	7.150**
	Rewards ←HC	21.528***
Relational Capital	InfoCust ←RC	45.361***
	InfoComp ←RC	12.790***
	LongtermCust ←RC	67.705***
	LongtermSupp ←RC	76.731***
Structural Capital	CooperTeams ←SC	6.746**
	OpenDialogue ←SC	9.740**
Innovation	Extensions ←RI	18.469***
	NewLines ←RI	10.784***
	GlobalNovelties ←RI	12.481***

***p<0.001

**p<0.05

Table B2: *AVE Scores: Slovenia*

Construct	AVE
HC (Human Capital)	0.5094
RC (Relational Capital)	0.7317
SC (Structural Capital)	0.5713
INN (Innovation)	0.5700

Table B3: *T-statistics for Convergent Validity: Pooled Albania and Republika Srpska*

Construct	Indicator	T-statistic
Human Capital	OTJTrain ←HC	21.705***
	KnowTrans ←HC	24.681***
	MeasPerf ←HC	15.144***
	Rewards ←HC	15.449***
Relational Capital	InfoCust ←RC	109.076***
	InfoComp ←RC	35.420***
	LongtermCust ←RC	173.208***
	LongtermSupp ←RC	221.149***
Structural Capital	AddTraining ←SC	50.095***
	OpenDialogue ←SC	60.681***
	Extensions ←RI	89.772***
Innovation	NewLines ←RI	48.674**
	GlobalNovelties ←RI	37.851***

***p<0.001

**p<0.05

Table B4: *AVE Scores: Pooled*

Construct	AVE
HC (Human Capital)	0.5239
RC (Relational Capital)	0.8587
SC (Structural Capital)	0.7235
INN (Radical Innovation)	0.7534

Table B5: *Cross Loadings of Measurement Items to Latent Constructs for Slovenia*

Construct	Item	HC	SC	RC	RI
HC	OTJTrain	0.6972	0.1378	0.3189	0.0728
HC	KnowTrans	0.7161	0.4021	0.4171	0.1427
HC	MeasPerf	0.5969	-0.1492	0.3001	0.1105
HC	Rewards	0.8262	0.0235	0.4294	0.1833
SC	CooperTeams	0.0889	0.6903	0.1811	0.1994
SC	OpenDialogue	0.2193	0.8162	0.149	0.2277
RC	InfoCust	0.4441	0.135	0.8458	0.2338
RC	InfoComp	0.1795	0.115	0.7279	0.232
RC	LongtermCust	0.56	0.2277	0.9181	0.1223
RC	LongtermSupp	0.4977	0.2272	0.9158	0.1335
INN	Extensions	0.1396	0.3263	0.2391	0.8253
INN	NewLines	-0.0725	0.09	0.0266	0.7236
INN	GlobalNovelties	0.2132	0.1215	0.0784	0.7107

Table B6: *Cross Loadings of Measurement Items to Latent Constructs for polled Albania and Republika Srpska of Bosnia and Herzegovina*

Construct	Item	HC	SC	RC	RI
HC	OTJTrain	0.7336	0.5122	0.2843	0.107
HC	KnowTrans	0.7598	0.4181	0.2067	0.1583
HC	MeasPerf	0.7073	0.4041	0.017	0.2586
HC	Rewards	0.6928	0.3391	0.2059	0.3616
SC	AddTraining	0.4671	0.8492	0.1373	0.4248
SC	OpenDialogue	0.5239	0.852	0.2248	0.3155
RC	InfoCust	0.3027	0.2629	0.9176	0.364
RC	InfoComp	0.0749	0.0988	0.8818	0.3173
RC	LongtermCust	0.2816	0.2282	0.9458	0.3909
RC	LongtermSupp	0.2395	0.1633	0.9596	0.3555
INN	Extensions	0.2607	0.4375	0.4442	0.8998
INN	NewLines	0.3247	0.3914	0.2283	0.8884
INN	GlobalNovelties	0.1949	0.2781	0.3005	0.8133

Table B7: *Correlations of the Latent Scores with the Square Root of AVE Slovenia*

	HC	RI	RC	SC
HC	0.5094	0	0	0
INN	0.03404	0.57	0	0
RC	0.276571	0.038259	0.7317	0
SC	0.045071	0.080089	0.046096	0.5713

Table B8: *Correlations of the Latent Scores with the Square Root of AVE Pooled*

	HC	RI	RC	SC
HC	0.5239	0	0	0
INN	0.09018	0.7534	0	0
RC	0.066203	0.150777	0.8587	0
SC	0.339539	0.189138	0.045412	0.7235

Table B9: *Reliability Scores Slovenia*

Construct	Composite Reliability	Cronbach's α
HC	0.8039	0.6923
INN	0.7983	0.6621
RC	0.9154	0.8798
SC	0.7258	0.2539

Table B10: *Reliability Scores Pooled*

Construct	Composite Reliability	Cronbach's α
HC	0.8147	0.6978
INN	0.9014	0.8391
RC	0.9605	0.9454
SC	0.8396	0.6178

APPENDIX C - Tests for Common Methods Bias

Table C1: *Common Method Bias analysis – Slovenia*

Construct	Item	Substantive Factor Loading (λ_n)	Variance Explained (λ_n^2)	Method Factor Loading (λ_m)	Variance Explained (λ_m^2)
HC	OTJTrain	0.834***	0.696	-0.119	0.014
	KnowTrans	0.223***	0.050	0.410***	0.168
	MeasPerf	0.874***	0.764	-0.183***	0.033
	Rewards	0.880***	0.774	0.019	0.000
SC	CooperTeams	0.759***	0.576	0.023	0.001
	OpenDialogue	0.754***	0.569	-0.024	0.001
RC	InfoCust	0.854***	0.729	0.003	0.000
	InfoComp	1.368***	1.871	-0.643***	0.413
	LongtermCust	0.577***	0.333	0.345***	0.119
	LongtermSupp	0.729***	0.531	0.185***	0.034
INN	Extensions	0.737***	0.543	0.096	0.009
	NewLines	0.908***	0.824	-0.155***	0.024
	GlobalNovelties	0.663***	0.440	0.084	0.007
Average		0.782	0.669	0.003	0.063

Table C2: *Common Method Bias analysis – Pooled*

Construct	Item	Substantive Factor Loading (λ_n)	Variance Explained (λ_n^2)	Method Factor Loading (λ_m)	Variance Explained (λ_m^2)
HC	OTJTrain	0.652***	0.425	0.089	0.008
	KnowTrans	0.772***	0.596	-0.020	0.000
	MeasPerf	0.827***	0.684	-0.156***	0.024
	Rewards	0.644***	0.415	0.089	0.008
SC	AddTraining	0.864***	0.746	-0.024	0.001
	OpenDialogue	0.837***	0.701	0.024	0.001
RC	InfoCust	0.818***	0.669	0.118***	0.014
	InfoComp	1.060***	1.124	-0.199***	0.040
	LongtermCust	0.864***	0.746	0.095	0.009
	LongtermSupp	0.974***	0.949	-0.022	0.000
INN	Extensions	0.741***	0.549	0.178***	0.032
	NewLines	0.973***	0.947	-0.100	0.010
	GlobalNovelties	0.899***	0.808	-0.083	0.007
Average		0.840	0.720	-0.001	0.012

APPENDIX D - Testing For Mediation Effects

Figure D1: *Full mediating effect of Structural Capital in the relationship between Human Capital and Innovation - Slovenia*

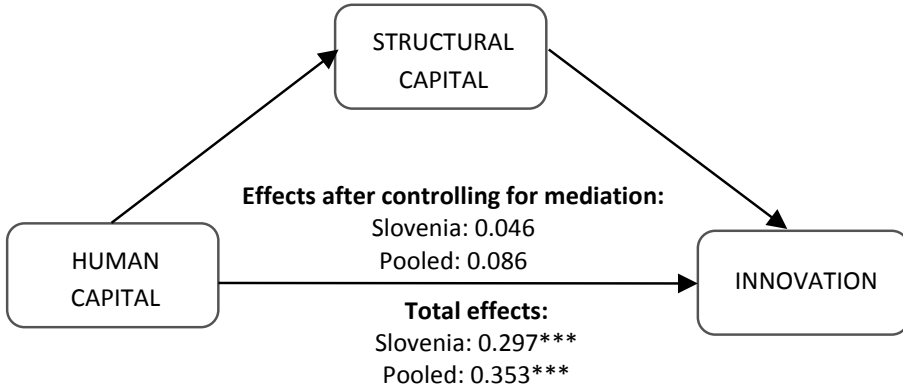
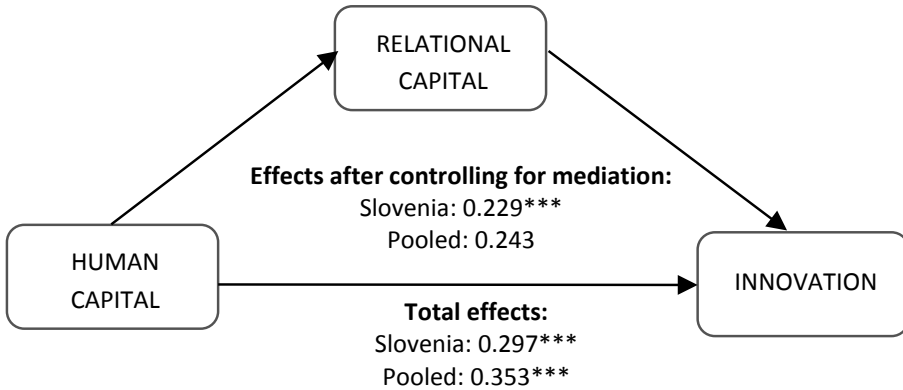


Figure D2: *Partial mediating effect of Relational Capital in the relationship between Human Capital and Innovation - Slovenia*



USER-DRIVEN INNOVATION: AN EXPLORATORY STUDY

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Received: 1 November 2014
Accepted: 15 January 2015

ABSTRACT: *Despite the relatively robust promotion of user-driven innovation (UDI) in practice, research on UDI remains in its early stages. Following a grounded theory analysis approach, this paper makes a contribution by conducting exploratory research of the field. Nine interviews yield an empirical basis for extracting categories connected with existing conceptual issues. The results reveal three key elements of the UDI (user involvement, searching for feedback, and design orientation). The results also indicate the interdisciplinary nature of UDI with branding, design, and company-user interaction as complementary fields in creating user experience. The analysis leads to four theoretical propositions for future studies. The article concludes with limitations and implications for future research.*

Keywords: *user-driven innovation, value creation, design, branding, company-user interaction*

JEL Classification: L26, O31, M31

INTRODUCTION

Integrating users into the innovation process is the subject of intense discussions, resulting in divergent conclusions. On one side, the relevant literature and practices acknowledge the beneficial impact of integrating users into the innovation process (von Hippel, 1998). UDI can improve a company's innovation capabilities (Lokshin, Gils, & Bauer, 2009; Ngo & O'Casey, 2013) and product performance (Lau, Tang, & Yam, 2010), and reduce discontinuous innovations market risk (Enkel, Perez-Freije, & Gassmann, 2005). However, another stream of the literature reveals that integrating users into the innovation process may result in merely incremental innovations (Christensen, 1997; Enkel, Kausch, & Gassmann, 2005) or even impede a company's innovation process (Lehrer, Ordanini, DeFillippi, & Miozzo, 2012; Schaarschmidt & Kilian, 2013). UDI is a nascent research stream; in recent years, it has been a popular topic in the business press (e.g. Broberg & Edwards, 2012; Guterman, 2009). In the academic literature, however, a dilemma about the role of the user in innovation has been present for decades. Authors disagree about the approach to researching users' needs (Leifer, 2000). Drawing increasingly on the market orientation concept (Kohli & Jaworski, 1990; Narver & Slater, 1990) and sophisticated data analysis techniques, authors emphasize the importance of continuous exploration of user needs. In contrast, critics maintain that asking users about their needs leads only to incremental innovations (Beckman & Barry, 2007; Shaw & Ivens, 2005). Radical innovations

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are the result of revealing users' latent needs, which can be discovered by qualitative and in-depth research methods, such as observations, storytelling and contextual inquiries (Bisgaard & Hogenhaven, 2010; Holtzblatt & Beyer, 1993). The idea of fitting products and services to users' needs is, therefore, not new. What is relatively new is the term 'UDI' and its emphasis on the role of the user in different phases of the innovation process.

Despite growing research interest in the demand side of value creation as being distinct from the supply side (Priem, Li, & Carr, 2012), the theory on UDI remains fragmented in contemporary management, marketing, innovation and entrepreneurship literature. UDI discussions are predominantly focused on different strategies (Hjalager & Nordin, 2011; Sandmeier, 2009), estimations and the consequences of integrating users into the innovation process (da Mota Pedrosa, 2012; Sandmeier, Morrison, & Gassmann, 2010). The literature also offers several definitions of the UDI (e.g. Grunert et al., 2010; Hjalager & Nordin, 2011; Wise & Hogenhaven, 2008) which are predominantly focused on user involvement. The topic is important for the theory of demand side of value creation, which needs more clear distinctions among the competing approaches to value creation (Priem et al., 2012). On the other hand the topic is also relevant for practice, which needs an insight into the contribution of the UDI to the product or service success. To advance the field of UDI we firstly need more theoretical conceptualization followed by empirical studies.

In order to address this gap, we contribute via systematic analysis of the UDI field based on the qualitative empirical data. Our approach, based on a grounded theory (Charmaz, 2006), reveals three key elements of UDI: user involvement, searching for feedback, and design orientation. The qualitative analysis confirms the interdisciplinary nature of the UDI concepts and explains how UDI contributes to the creation of user experience. The study discloses ways of involving users in the innovation process in different innovation phases. In addition, this study highlights the culture of UDI which reflects strategic orientation towards UDI.

The following research questions drive our study: (1) What are the key elements of UDI? (2) What are the ways of involving users in the innovation process and in which phases of the innovation process can a company involve users? (3) How does UDI contribute to the developing of user experience? (4) How is UDI incorporated into the organization? Using a grounded theory approach, we derive theoretical categories that are further developed into four propositions for further research.

The remainder of the article is structured as follows: first, common grounds of different UDI definitions are presented. Second, conceptual issues in UDI research are enumerated as a starting point for our grounded theory analysis. Third, the article proceeds with methodology, results and discussion. Fourth, the article is finished with a conclusion, limitations, and suggestions for future research.

1 DEFINITIONS OF UDI

The literature offers several definitions of UDI. Some emphasize researching users' needs, while others see users as active contributors in the innovation process. For instance: 'UDI is the process of tapping users' knowledge in order to develop new products, services and concepts. A UDI process is based on an understanding of true user needs and a more systematic involvement of users (Wise & Hogenhaven, 2008, p. 21). This definition is based on researching users' needs and presents UDI as a process. In addition to researching users' needs, some other definitions present users as active contributors in the innovation process. For instance:

'UDI is the phenomenon by which new products, services, concepts, processes, distribution systems, marketing methods, etc. are inspired by or are the results of needs, ideas and opinions derived from external purchasers or users. UDI involves existing and/or potential users, and the processes rely on systematic activities that search for, acknowledge, tap, and understand the users' explicit, as well as implicit, knowledge and ideas. Methods in UDI span from superficial observations to consultations and intensive involvement of the users in co-creation processes' (Hjalager & Nordin, 2011, p. 290).

At first sight, different definitions of UDI converge on the same united grounds:

- (1) Latent user needs. In contrast to technology- or price-driven innovation, users are at the centre of the UDI process. Definitions of UDI consider the exploration of users' needs (Christiansson et al., 2008; Hjalager & Nordin, 2011; Rosted, 2005). In addition to stated user needs, these definitions emphasize that the goal of research is to reveal users' latent needs (Wise & Hogenhaven, 2008). The process of revealing latent user needs is deliberate and systematic (Grunert et al., 2010). Exploration of user needs is not limited to the examination of requirements and desires directly connected with the product or service. Rather, it includes a user's broader life, identity, value system and desired holistic experience with the product or service (Hjalager & Nordin, 2011).
- (2) Connection with design. Existing UDI literature directly or indirectly refers to the role of design in UDI. The role of intuitive and human-centred design is emphasized (Beckman & Barry, 2007; Bisgaard & Hogenhaven, 2010; Rosted, 2005). Design in UDI aims to simplify the usage and/or to accommodate the user interface of the product or service to the user's abilities, needs and desires. In this way, design meets users' functional, symbolic and experiential needs (Venkatesh, Digerfeldt-Månsson, Brunel, & Chen, 2012; Verganti, 2008). This perspective goes hand in hand with human/user-oriented/centred design (Karat, 1997; Veryzer & Borja de Mozota, 2005) and brand identity development. User-friendly design and branding of a new product or service is a source of competitive advantage (Aaker, 2007; Verganti, 2008).
- (3) UDI is a multi-stage, dynamic and interdisciplinary problem solving process. Despite different ordering and names of stages, authors agree that UDI is not a straightforward and unified process. It consists of several phases, which are interchangeable, repeatable and non-linear (Martin, 2009). Hence, the process is dynamic, because it

emerges through social interactions and varies according to context. Moreover, due to the complexity and requirement of diverse competencies for UDI (e.g. exploration of user needs, touch-points design, brand development, user experience design, technological feasibility, business viability), most authors suggest a team approach based on interdisciplinary and diverse skills, personality traits and attitudes (Grunert et al., 2008).

- (4) UDI as being simultaneously a philosophy and methodology. Early discussions (Foxall & Johnston, 1987; von Hippel, 1986) described different methodologies of UDI that involve users in the innovation process. Some contemporary discussions (Christiansson et al., 2008; Grunert et al., 2010; Hjalager & Nordin, 2011; Kuusisto, Kuusisto, & Yli-Viitala, 2013) remain focused on UDI as a set of different methodologies that enables practitioners to learn from users, reveal their latent needs and create user-friendly products and services. In other words, they aim to reveal secret and difficult-to-access information about the user. These methodologies include, but are not limited to, ethnographic research (Elliot & Jankel-Elliot, 2003), rapid prototyping (von Hippel, 1986), lead user involvement (von Hippel, 1986), observation of user behaviours (Hjalager & Nordin, 2011), storytelling (Christiansson et al., 2008) and contextual inquiries (Holtzblatt & Beyer, 1993). Recent discussions (Brown, 2008; Rosted, 2005; Wise & Hogenhaven, 2008) have started seeing UDI as a business philosophy, in which all business strategies, tactics and processes are oriented to the users. This literature is closely associated with the philosophy of the strategic role of design in business (Martin, 2009; Venkatesh et al., 2012). Such a view is congruent with a resource-based view, because UDI is considered to be a strategic orientation for developing and sustaining competitive advantage.

The discussion above leads us to the conclusion that the field of UDI needs an identification of its key elements that will guide further conceptualization for empirical research in the future. According to the grounded theory, we start with preliminary conceptual issues (Charmaz, 2006), which are investigated by qualitative research techniques. The grounded theory approach is suitable for developing a theory but not for testing a prior theory (Charmaz, 2006). As the theory of the UDI field is in its infancy stage, a grounded theory approach is suitable for the exploratory examination of the field. In the next section, we briefly introduce the grounded theory approach and describe conceptual issues derived from the literature.

2 APPLYING THE GROUNDED THEORY APPROACH TO THE UDI FIELD

The grounded theory approach

Introduced by Glaser and Strauss (1965) the grounded theory emerged as an alternative approach in qualitative social research promoting both the inductive and deductive method to theory construction. 'Grounded theory methods consist of systematic, yet flexible guidelines for collecting and analysing qualitative data to construct theories 'grounded' in the data themselves' (Charmaz, 2006, p. 2). In contrast to the falsification and verification

in the traditional scientific process, the grounded theory uses data in order to develop a theoretical framework without prior hypothesis development based on the literature review. The results of the grounded theory are a set of conceptual hypotheses developed from empirical data or a set of probability statements about the relationship between concepts (Glaser & Strauss, 1965). As such, the grounded theory approach is suitable when no prior theory exists or when the existing theory is too abstract to be tested (Ji Young & Eun-Hee, 2014). The UDI field in the literature has several case studies and reports, but rare empirical studies and theoretical frameworks. Therefore the grounded theory approach might be beneficial for the exploratory investigation of the key conceptual issues.

The core principle of the grounded theory is the constant comparative analysis, which represents the process of coding and analytic procedures with deriving theory from integrating categories and their properties (Charmaz, 2006). The grounded theory is not a prescribed process with precisely-defined research steps. The grounded theorists use different approaches, especially to the coding process. Already Glaser and Strauss (1965) highlighted that every researcher has to develop its own approach to the grounded theory which is adapted to the specifics of the research problem. We will describe three alternative approaches to the coding process. We will introduce our approach in the methodology section.

Glaser (1978) proposed two phases of coding: substantive coding and theoretical coding. Substantive coding is a first level of abstraction where we code every line of the transcription or field notes. Substantive coding also encompasses selective coding, in which we find our core variable among the first codes and we selectively code the data with the core variable. Theoretical coding follows the substantive coding. In theoretical coding a researcher integrates the concepts from the first phase of coding into hypotheses which reflect a theoretical model. A theoretical model emerges from the data and is not conceptualized in advance (Glaser & Strauss, 1965).

Later Corbin and Strauss (1990) introduced three stages of coding: open, axial and selective coding. Their process is in contrast with Glaser's more prescriptive. Open coding refers to labelling the incidents with concepts. Axial coding explores the relationships between the concepts from open coding. Selective coding includes a selection of core concepts and generation of a story that connects those concepts (Corbin & Strauss, 1990).

Recently Charmaz (2006) also suggested three coding stages: initial, focused and theoretical coding. Initial coding is similar to Corbin's and Strauss's open coding. Focused coding aims to narrow the initial codes to frequent and important codes. Theoretical coding results in a theory by examining the relationships between categories (Charmaz, 2006).

Conceptual issues of the UDI field

Despite the grounded theory approach does not build on a literature review, some authors starts with a brief examination of the most frequent conceptual issues that are evident in the literature (e.g. Keranen & Jalkala, 2014; Venkatesh et al., 2012). Following the process

of these authors we also investigated which are the most common conceptual issues in the UDI literature. The identification of the frequent conceptual issues of the field served us as a guideline in preparing interviews. The conceptual issues also served us as themes in the coding procedure. By defining the conceptual issues at the beginning we achieved more systematic approach to the study. The process was not aimed to developing theory in advance which is strictly forbidden in the grounded theory approach (Glaser & Strauss, 1965). It only identified the most frequent issues, which needs further research. The literature review yielded four frequent conceptual issues.

Key elements of UDI. The literature provides different definitions of UDI. Moreover, different strategies of UDI propose different aspects of UDI. For instance, design thinking (Brown, 2008) builds upon qualitative investigation of latent users' needs, prototyping and testing. In contrast, living lab techniques (Dell'Era & Landoni, 2014) provide open spaces where users co-create new products/services. The literature remains vague when proposing key elements that integrate the UDI field. The answer to the question which are the key elements of UDI will advance the theory in this field.

Ways of involving users in the innovation process. Many articles describe strategies of involving users in the innovation process (Hjalager & Nordin, 2011; Wise & Hogenhaven, 2008). Some companies see users as active contributors in new product/service development, whereas other companies attempt to investigate latent needs, but further development of new product/service remains without users' participation. The breadth and depth of the users' contributions in the innovation process vary across companies (Fang, Palmatier, & Evans, 2008). However, the trend of customizing new products to users' needs, rapid e-commerce development, and new two-ways interaction with users through social media result in companies' increasing tendency to see users as active contributors (Rosted, 2005). Nambisan (2002) outlines three common roles of users in the innovation process, i.e. the users are a source of ideas, the users can co-create new product's/service's features, and the users can test prototypes of a new product-service. The question is how those three roles are reflected in different phases of the innovation process.

UDI and creation of user experience. The literature is clear that the UDI field is interdisciplinary (Hippel, 2005; Rosted, 2005). For instance, the marketing literature elaborates the methods for researching users' needs, the entrepreneurship literature highlights early testing of product's/service's concepts and business models, and the design literature investigates the aesthetic, functional and psychological role of design in creating user experience. Despite the many advantages of the interdisciplinary approach, its disadvantage is that different streams of knowledge prevent a clear picture of creating user experience in UDI. The quality of a user's experience with a product, service or company is an antecedent of satisfaction (Yoon, 2010), future use (Castañeda, Muñoz-Leiva, & Luque, 2007; Ismail, Melewar, Lim, & Woodside, 2011), and recommendations to other potential users (Santos, Mazzone, Aguilar, & Boticario, 2012). In order to obtain a clearer picture of the role of UDI in a firm's performance, we need to investigate which aspects of UDI contribute to the creation of user experience.

Culture of UDI. The literature distinguishes thinking from action (Grinstein, 2008). Introducing UDI strategies in an organization does not yield results if the company does not develop a culture that supports the adoption of such strategies. Some researchers claim that UDI is not merely about involving users in the innovation process, but is also about creating teams and a flat organizational structure that supports user's contribution in the innovation process (Witzeman et al., 2006). More elaboration is needed about the distinction between the strategies of UDI and the culture that supports the implementation of UDI.

We have explored those conceptual issues by conducting nine interviews. The purpose of the empirical study is to discover theoretical ideas and suggest propositions for further research. The grounded theory approach is discovery oriented (Charmaz, 2006), which serves our goal to conduct an exploratory study of the UDI. The aim of this study is not to propose and test a conceptual model. The key goals are to identify the key categories in the UDI, to create the relationships between the categories and to suggest theoretical propositions, which will need further quantitative study. The next section includes more details about the methodology.

2 METHODOLOGY

Sample and procedures

Our empirical data comprise nine semi-structured interviews. As the goal of the research is an exploratory investigation of the field, an interview is a suitable research technique (Denzin & Lincoln, 2005). In preparing the research design, we followed the recommendations by Charmaz (2006), and Denzin and Lincoln (2005). We used theoretical sampling in order to ensure a relevant representation of reality (Denzin & Lincoln, 2005). The sample of nine interviewees is small, but relevant for the topic, because it includes a relatively recognised people from the local environment who are actively connected with new product/service development. In selecting people for an interview, we followed several criteria. First, we included persons who work on new product/service development. Second, in order to ensure career diversity, we wanted to include entrepreneurs, business consultants and researchers. Entrepreneurs offer a view from everyday business practice whereas business consultants and researchers have a theoretical knowledge about the field and also knowledge about different practices on the market, which they gain from their everyday contacts with entrepreneurs. Fourth, in order to incorporate diverse industries, i.e. both services and manufacturing, we also included industries in which UDI is more common, such as creative industries, high technology, and marketing.

Initially, we sent invitations to ten people. One rejected participating in an interview due to the lack of time. As a criterion of saturation was fulfilled with nine interviews, we did not include additional participants. 'Saturation' refers to the point when information started to repeat and no new or relevant information emerges with respect to our conceptual issues (Denzin & Lincoln, 2005). Table 1 present the demographic data of the participants. On average, interviews were 58 minutes long.

Table 1: *Interviewees' demographic data*

Code	Career	Work experience (in years)	Business owner (in years)	Gender	Education	Industry
A	Entrepreneur	24	7	F	BA, business	Small business development
B	Researcher, business consultant	16	1	F	PhD, business	Small business development
C	Entrepreneur	4	1	M	BA, business	Commerce
D	Entrepreneur	21	6	F	MSc, business and sociology	Marketing
E	Business consultant	6	/	M	MSc, business	Innovation management
F	Entrepreneur	12	6	F	MSc, sociology	Creative industries
G	Business consultant	23	3	F	MSc, business	Marketing
H	Entrepreneur	19	3	F	MSc, computer arts	Fashion
I	Entrepreneur	35	18	M	MSc, physics	Medical lasers

Semi-structured interviews

The interviews were semi-structured, individual, and non-standardized in order to follow the narrative of the participants. We started with the initial pool of questions and then added sub-questions or additional questions with the respect of the stream of thoughts of the participant. The list of initial questions is in the Appendix 1. The interviews were individual, because we wanted to analyse the narrative of every participant. Furthermore, individual interviews allowed us to adjust the time of the interview to the participant's schedule. The non-standardized form of the interview allowed us to clarify the questions, to add additional questions or to withdraw some redundant questions in the course of the interview. Such a form of interview is suitable, because, with respect to the grounded theory approach, our goal was to obtain theoretical ideas and not to test a conceptual model.

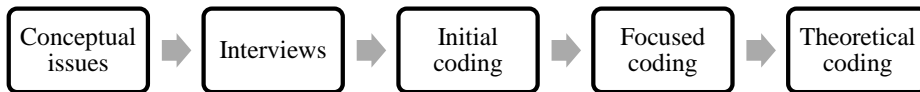
Data analysis

The research procedure follows the recommendation by Charmaz (2006). Figure 1 shows the research steps. The first step includes conceptual issues which are introduced in previous section. The conceptual issues served as guidelines in preparing interviews and as themes in coding procedure. The second step is interviews. The interviews were conducted in Slovenian language; however, an English translation is presented in this paper. We recorded all the interviews and then prepared a transcription. We analysed 78 pages of

narrative text. The third step is initial coding in which we extracted the central themes represented by conceptual issues in the first step. Focused coding followed as a fourth step. In focused coding we extracted the sub-themes. The further step in grounded theory is theoretical coding, which refers to substantive categories that are related to core categories (Charmaz, 2006). Core categories in our case are sub-themes identified in the coding process. Those initial concepts are accumulated, collapsed, and related to each other. By identifying sub-themes and relation among the categories, we construct a story line that emerges to further theoretical ideas. Theoretical ideas are reflected in the proposed set of propositions, which is the final goal of the grounded theory.

The procedure is suitable, because the central themes were already identified by frequent conceptual issues in the literature. Therefore we didn't need an open coding procedure as proposed by Glaser and Strauss (1965).

Figure 1: *Research process*



3 RESULTS

Emergent themes and sub-themes

The basis for the theoretical framework in the end is the themes and sub-themes presented in Table 2. Sub-themes emerged from our grounded theory analysis. We will discuss each sub-theme and support it with the data from the interviews.

Table 2: *Subthemes of the interviews*

Themes	Sub-themes
Key elements of UDI	User involvement Searching for feedback Design orientation
Ways of involving users in the innovation process	Phases of the innovation process Breadth and depth of users' contribution
UDI and creation of user experience	Brand Design Company-user interaction
Culture of UDI	Strategic orientation towards users Behavioural level

Key elements of UDI

The participants were asked to describe an example of developing a new product/service, to share their experience how other companies develop new product/services, and to enumerate different ways of how they integrate users in the innovation process. Various contextually rich answers converge to three common grounds: user involvement, searching for feedback, and design orientation.

User involvement. The key element of the UDI is integrating users in different phases of the innovation process. The term ‘UDI’ means understanding users and giving them an active role in the innovation process. Understanding users was indicated as follows: ‘I need a certain feeling that I understand what the users want in particular,’ (Participant E). This statement refers to cognitive or emotional empathy, which was evident from most of the participants, for instance: ‘I need to go under the skin of my users and think what I need to offer them so that they will see benefits for themselves,’ (Participant D). The process of gathering knowledge in order to understand the users is more or less unsystematically: ‘I often go and try things, this is really informal, for instance, I go out as a tourist. I gather the knowledge without any particular systematic approach. I try and the write something and again try,’ (Participant F). Understanding users in researching their needs is the biggest part of user involvement. The active role of users in the innovation process is another part of user involvement: ‘It is interesting when you bring users together and they have to create new products from our existing products or new products from materials which we use in our products,’ (Participant E). Another participant highlights partnerships with users: ‘It often happens that people work out of assumptions about the users, and they just cannot understand that you need a partnership with users if you want to develop a successful new product,’ (Participant D).

To summarise, user involvement refers to two aspects. The first is researching users’ needs. The second refers to the active role of users in the innovation process. Researching users’ needs is a relatively frequent, whereas giving users an active role in the innovation process remains in its infancy.

Searching for feedback. The emphasis on continuous search for feedback from the earliest versions of product concept was evident from the majority of the participants. For instance: ‘Go out for feedback. If you get enough “yes” answers, you know that you are on the right way. It is really important to do that before you even start developing your product,’ (Participant C). Such an emphasis on continuous searching of feedback is in line with the lean start-up approach in entrepreneurial innovation (Blank, 2013). This approach also builds upon users’ feedback in every stage of the innovation process. Another participant said: ‘We organize workshops with users where we present the product, users get an opportunity to test the product and give us feedback. It happened one time that our business idea sounded very promising, but then we realized from the feedback that we will not have market big enough for implementing the idea,’ (Participant B). The learning from feedback is constant: ‘We do not know everything at the beginning of the entrepreneurial process. We learn with users down the road,’ (Participant G). The feedback need to come

from real potential users and customers: ‘You cannot test prototypes among friends. It is not real. It is even better to include the whole school because teachers can be very critical,’ (Participant D).

Design orientation. Participants refer their answers about the UDI to the product/service appearance. They mention user-friendly products and the aesthetic quality of the products. For instance: ‘We cannot afford to have complicated products. The technology itself is already complicated. So, if we do not know how to simplify things in designing the product, our users will not use them,’ (Participant I). Another comment by the same participant reflects the role of users in designing new products: ‘Users do not know anything about the technology, but they can always tell you their preferences about the functions they need or colours or how the data appears,’ (Participant I). The participants also mention that the need for service design is also essential despite it not being so widespread among the companies. One participant claims: ‘Just imagine McDonald’s sales staff. They are all the same, they communicate in one particular way. You may say they are robots, but actually they are a part of a bigger design that enables the company to give all the users the same experience,’ (Participant E).

The questions related to the key elements of UDI aim to explore the meaning of the UDI. The sub-themes extracted from the data confirm the existing definition of UDI, which emphasizes researching users need and the active role of users in the innovation process (Hjalager & Nordin, 2011; Wise & Hogenhaven, 2008). In addition, the sub-themes reveal two other aspects of UDI: searching for feedback and design orientation. Two new aspects may emerge in a new integral definition of UDI. This leads us to the first theoretical proposition:

Proposition 1: User involvement, searching for feedback, and design orientation are consistent parts of the UDI.

Ways of involving users in the innovation process

Phases of the innovation process. A general answer to the question about the ways of involving users in the innovation process was that a company can involve users in every stage of the product/service development, but they rarely practice this. For instance: ‘Indeed, you can involve users everywhere, but companies do not even think about this,’ (Participant G). The participants mentioned the following phases in no particular order: researching users’ needs, creating ideas, prototyping, designing product’s features and appearance, creating and testing a business model, and developing a brand. One participant mentioned that involving users in the innovation process is unsystematic: ‘You ask them and then improve the concept. Well, not so systematically, but intuitively when you do not know the other way forward,’ (Participant A). The UDI strategies are focused to different innovation phases (Christiansson et al., 2008; Hjalager & Nordin, 2011) and rarely involve users in the whole process.

Breadth and depth of users' contribution. Users can be involved in one or several innovation activities. The number of innovation activities in which users participate represents the breadth of users' contribution (Fang et al., 2008). For instance: 'User involvement is everywhere, but our companies stay on the surface and are satisfied only with researching users' needs' (Participant D). Users can be deeply involved in the innovation process with active participation in the development of the product's feature or they can remain only at the surface with general feedback regarding whether they would buy a new product or not (Fang et al., 2008). For instance: 'Yes, they can tell me everything about the illustrations they want. In this case, I would customize the product to their wishes. However, design is my thing so I do not make prototypes and tests' (Participant H). This statement reflects a superficial involvement of the user in the product development. In contrast, another participant elaborates on a deep involvement of users in the innovation process: 'If the users have appropriate knowledge they can actually lead the whole process. In this case I can invite them to work on a new project in our company,' (Participant I). User involvement may be connected with user satisfaction (Yoon, 2010). One participant said: 'By involving users in the innovation process, you are creating your customer base from the beginning. They are more satisfied with the product if they contribute something,' (Participant C). From sub-themes of involving users in the innovation process, we can derive the next proposition:

Proposition 2: Breadth and depth of user involvement are positively related to user satisfaction with a new product/service.

UDI and creation of user experience

When asked to elaborate how UDI contributes to the creation of user experience, three sub-themes emerged: brand, design and company-user interaction.

Brand. In UDI, brands can engage the users to participate in the process. 'Users will not trust in no name company. If you are respected among your users, they will willingly participate in the innovation process,' (Participant I). Brands differentiate the products/services (Aaker, 2007). One participant mentioned: 'You need to give something tangible to all those products on the market. A brand can be that tangible part of differentiation, and users can help to create it. But you need to be aware that brand is not logo, it is a fundamental competitive advantage of the company,' (Participant B). In contrast, brand orientation can lead to oversaturation, with the symbolic value overshadowing the content of the brand achieved by the product's function and user experience (Anker, Kappel, Eadie, & Sandøe, 2012; El-Amir & Burt, 2010). For instance: 'Brand is all about the promise and credibility. The brand should be congruent with the needs of the users. From this point onwards we need to be consistent in delivering our promise,' (Participant D). Brand orientation may quickly lead companies to underestimate the product's tangibles, resulting in poor performance in delivering the brand promise. Brand credibility needs to be maintained in the long term (Balmer, 2012; Sweeney & Swait, 2008) to sustain competitive advantage. 'You need a focus. If you listen your users deeply enough, they will show

you, where should be the focus. From this point onward you only need the right package and user can contribute here as well. At least with feedback if not with something else,' (Participant E).

Design. The meaning of design in UDI extends beyond aesthetics and style though this dimension is also considered. 'Design serves to users' needs. Design need to improve user experience and you can easier achieve this if you involve users in designing. If we do not consider this, then our design serves the needs of the designer and this is not a good way,' (Participant E). Design creates user experience in terms of functional and symbolic needs (Verganti, 2008). 'In designing a new product/service, you need to constantly have in mind the user experience,' (Participant B). One participant pointed out a communication value of a design: 'Design is a communication tool, because it contributes to the recognisability,' (Participant G). According to Veryzer and Borja de Mozota (2005), emphasis on user-oriented design has several implications in the innovation process: (i) it encourages a more collaborative innovation process; (ii) it facilitates the idea generation process; (iii) it results in a superior product or service; and (iv) it leads to products that are more readily adopted by users. Thus, design in UDI reflects both the innovation process and the product's/service's holistic appearance in terms of functionality and symbolic value. One participant summarizes the meaning of a design for creating user experience: 'The user must not see the design. If the design captures the entirety of a user's needs, then users will not even notice the complexity of our technology. They will use it intuitively,' (Participant I).

Company-user interaction. As UDI builds upon a holistic view of meeting user's needs, interaction between the company and the user is an integral part of UDI. For instance: 'When you come to a store, the staff there will give you a whole picture about the company. Every interaction has to be consistent,' (Participant D). The role of interaction between the company and user in UDI thus completes user experience by fulfilling the value proposition: 'The service can be the same – an airline brings you from point A to point B, but your experience as a user is different if a company builds a proper interaction with users,' (Participant A). Based on their interaction with a company, users make judgments about it (Dall'Olmo Riley & de Chernatony, 2000), develop trust in it (Jevons & Gabbott, 2000) and create future intentions for purchasing from it (Nasermoadeli, Choon Ling, & Maghnati, 2013). Company-user interaction is a soft side of UDI: 'It is a feeling, a creation of a particular atmosphere, it has nothing to do with logo or brand,' (Participant A). In UDI, neglecting company-user interaction means missing the opportunity for inclusive support of user experience, regardless of whether it is of a service or product: 'You cannot expect cooperation from them if you do not look them in a holistic way. If you look them as a whole, as people, you will get more of them, more feedback and more cooperation. You cannot look at them as consumers – this is a big problem, because they are people,' (Participant F). The process of company-user interaction is not straightforward to create, because 'the interaction needs to be constant, it is an on-going two-way process, you cannot always plan it,' (Participant E). Despite the process being difficult to plan, companies can consciously plan touch-points with users: 'The employees can cause inconsistency. Therefore, it is really important that they are aware of the goals, vision, reasons why they

have to behave in a certain way,' (Participant D). Touch-points are the interaction points between a company and user; they create the user experience (Clatworthy, 2011). Examples include check-outs in retail, call-centres, web portals and complaints procedures.

Proposition 3: Brand, design, and company-user interaction are positively related to the quality of the user experience.

Culture of UDI

Strategic orientation towards users. According to cognitive behavioural theories, cognitions determine actions (Wood & Bandura, 1989). If an entrepreneur believes that expert knowledge leads to entrepreneurial success, he will focus his energy on his expertise. If he considers selling to be at the core of business success, he will concentrate his effort on selling. Similarly, if an entrepreneur understands user integration as a crucial part of innovation, he will more likely use UDI methodologies in business development: 'An entrepreneur needs to move from a manufacturing logic to marketing logic. He/she needs to move from thinking about what they produce and how they can sell their products. They need to think about users and users' needs,' (Participant D). Likewise, another participant adds: 'The mind-set is crucial. I need to listen my users. Not out of politeness, but I need a real and deep focus on the users in every step I do,' (Participant A). Our participants highlight that the users need to be embedded in the thinking patterns of the entrepreneurs: 'I need to consider a lot of different dimensions in thinking about the users' needs. Companies often make mistakes because they function only on one dimension in terms "I like it" or "I do not like it". For instance, 'My wife will not have this so we will not develop this, because it has no market potential' (Participant F).

Behavioural level of UDI. The behavioural level includes different methodologies of implementing the UDI: 'When you know how to listen and when you are actually prepared to improve something, you will have a need to ask for a feedback,' (Participant D). UDI refers to the whole team: 'If we know how to think together as a team then it will be easier to make an action,' (Participant E).

Proposition 4: Strategic orientation towards users is an antecedent of implementation of UDI methodologies.

In conclusion, we can integrate the last two conceptual issues, i.e. creation of user experience and the culture of UDI. Brand, design and company-user interaction development may act as reciprocally related processes, which contribute to creating user experiences. This implies UDI to be an interdisciplinary process. Despite the fact that different methodologies of UDI exist, the creation of user experience also needs branding, design and company-user interaction development in order to develop a successful new product/service. Moreover, methodologies of UDI, such as lead user innovation, design thinking, living labs etc., are not sufficient if the company is not strategically oriented towards users. This refers to the entrepreneurs' beliefs in users as a source of ideas. Methodologies of UDI are limited to the behavioural level. If an entrepreneur's cognitions are not reconciled

with a user as an active contributor, the implementation of UDI methodologies will be partial and incomplete. Figure 2 is a representation of different perspectives on creating user experience. UDI methodologies (behavioural level) are supported by strategic orientation towards users. In addition to the methodologies, the UDI process also includes other fields, such as design, branding and company-user interaction, in order to create a desirable user experience.

Figure 2: *Creating user experience as multidisciplinary process*



5. DISCUSSION

The aim of this study was to generate theoretical ideas for further research of the UDI field. The theoretical ideas were created from empirical data based on nine semi-structured interviews with entrepreneurs, business consultants, and researchers. We started with a basis of four conceptual issues that are present in the contemporary literature: key elements of UDI, ways of involving users in the innovation process, UDI and creation of user experience, and the culture of UDI. Following the grounded theory approach, we derived sub-themes for each conceptual issue from our primary data along with theoretical propositions. Our study contributes to the existing literature with theoretical propositions that are derived from empirical data. The propositions are not exhaustive; rather, they aim to highlight several issues that need further study. Below is a list of the suggested propositions:

Proposition 1: User involvement, searching for feedback, and design orientation are consistent parts of the UDI.

Proposition 2: The breadth and depth of user involvement are positively related to user satisfaction with a new product or service.

Proposition 3: Brand, design, and company-user interaction are positively related to the quality of the user experience.

Proposition 4: Strategic orientation towards users is an antecedent of implementation of UDI methodologies.

Based on our results, the UDI field needs a fresh conceptualization. The current definitions of the UDI (e.g., Hjalager & Nordin, 2011; Wise & Hogenhaven, 2008) highlight two aspects, i.e. researching users' needs and giving the users an active role in the innovation process. Our study yielded two additional aspects: searching for feedback and design orientation. Searching for feedback and design orientation are embedded in the UDI. This raises another research question for future research. Current studies treat UDI as a uni-dimensional construct of customer involvement (Alam, 2002; Chien & Chen, 2010). Based on the results of our study, additional research on the dimensionality of UDI concept is needed. Since UDI reflects three key elements, i.e. user involvement, searching for feedback and design orientation, those three elements may represent three dimensions.

The ways of involving users in the innovation process remains an open question. UDI practices are becoming increasingly widely acknowledged among companies (Christianson et al., 2008). Companies understand UDI as leverage of their development in a competitive environment (Lichtenthaler, 2011). However, integrating users in the innovation process is not straightforward (Enkel, Kausch, et al., 2005; Lokshin et al., 2009). Companies need capabilities to engage and motivate users (Lettl, 2007). However, involving users in the innovation process may also hinder creativity and result in only incremental innovations (Beckman & Barry, 2007). Empirical research is needed on how breadth and depth of user involvement contribute to user satisfaction.

UDI cannot be studied in isolation, because the concept itself promotes interdisciplinarity. Creating a beneficial user experience is at the centre of attention in UDI. The process of creating user experience also concerns other fields, such as design, branding and company-user interaction, and not merely the R&D field. Further research is needed on how branding, design, and company-user interaction effect the quality of user experience. Brand, company-user interaction and design act as key synergic elements of developing and sustaining of user-driven innovations, which are implicitly (brand development, company-user interaction) or explicitly (design) present in UDI research and practice. These three elements also allow different methodologies of UDI, but every element is augmented in the quality of users' experience. Successful innovations include all three elements co-existing in a harmonized manner. A sophisticated brand without a user-friendly solution for user needs will be seen only as a marketing trick. A beneficial and feasible design can be lost in the crowd of innovations if a company does not see any value in developing an eloquent brand. The meaning of both design and brand can be severely reduced if a company fails in implementing valuable interactions with users, either through personal or web interaction. We do not want to say that an innovation without a harmonized bundle of these essential elements will necessarily fail. However, the innovation performance can be significantly extended if a company puts deliberate effort into all three elements synchronically.

UDI is not merely a set of different methodologies that can be implemented in a company. Our study reveals that the strategic orientation towards user may be a precursor of the implementation of UDI methodologies, which means that companies that are oriented towards users will more likely involve them in new product/service development.

Theoretical implications

Our study has some theoretical implications. In contrast to the current conceptualizations of UDI as uni-dimensional construct (Carbonell, Rodriguez-Escudero, & Pujari, 2009) our study indicates UDI as multi-dimensional construct with user involvement, searching for feedback and design orientation as three distinctive dimensions. Although this proposition needs an empirical verification, our research showed that user involvement is only one aspect of the UDI. If we conceptualize UDI as multidimensional construct, we will also need a new measure of UDI in order to empirically investigate this field.

Furthermore, our study showed that user involvement might be positively related to user satisfaction. This finding implies that user involvement might be an important predictor of user based indicators of product success. In the studies of new products or services success researchers need to consider the breadth and depth of user involvement (Fang et al., 2008).

Researching the quality of user experience needs to consider several aspects, i.e. brand, design, and company-user interaction. Usually those aspects are investigated by researchers from different fields (e.g. marketing, design, innovation). Our study suggests that UDI methodologies can be used in creation of brand, design and company-user interaction. Even though researchers come from different fields, they can address the investigation of the quality of user experience more holistically if they consider the role of UDI in creating brand, design or company-user interaction.

UDI methodologies are implemented on the basis of several antecedents. Our study indicated that a strategic orientation towards users might be one of the possible antecedents. Companies which are strategically oriented toward users will more likely involve them in the innovation process. This implies that the UDI field might also benefit from multi-level research designs in which strategic orientation towards users can be treated as company-level phenomenon and UDI methodologies can be treated as group-level phenomenon.

Managerial implications

Creating user experience is a complex process. If managers want to create a meaningful user experience, the innovation process needs to involve users deliberately from the very beginning of product or service development. Although the UDI may be time consuming, it contributes to a greater fit between the product or service and user needs (Ngo & O'Cass, 2013). The constant feedback in UDI is a source of information for further development for practitioners. However, user involvement does not mean asking users directly about their needs or about the feedback on the product concept. Practitioners are often critical to direct investigation of users' needs (Brown & Katz, 2009), because some of them do not believe that users are able to define their needs. User involvement in UDI rather means the whole continuum of methods dispersed from very direct involvement (e.g. asking users about their needs) to very indirect involvement (e.g. observation in the context) (Bisgaard & Hogenhaven, 2010). The managers need to decide which method is suitable for their

product development. A managerial implication of our study is that the practitioners need to be proactive in terms of users' involvement. The question about which method is suitable for a particular context of new product or service development remains open.

Another managerial implication refers to the interdisciplinarity of the UDI field. Our research showed that brand, design and company-user interaction are as important as product's or service's functional characteristics, because they contribute to user experience. Consequently, the innovation process needs to include development of brand, design and company-user interaction in order to meet users' symbolic needs. Traditionally, brand, design and company-user interaction demand different knowledge and skills than development of product's or service's functional characteristics. Interdisciplinary teams might be more competent to approach holistically to product or service development and consider both user's functional and symbolic needs.

Finally, practitioners will easily adopt UDI methods if their management will be focused on users. Our research showed that a strategic orientation towards users may be an antecedent of UDI methodologies. Practitioners thus need to get support for UDI from their management before they start changing the innovation process. Otherwise, time consuming UDI may surprise the management which might withdraw their support to the UDI.

5. CONCLUSION, LIMITATIONS AND IMPLICATIONS

An important impact of the study is the groundwork for future studies. The study reveals individual propositions based on empirical data. A contribution to marketing literature refers to the embeddedness of brand development, design, and company-user interaction in the innovation process. Analogous development of those three elements and product or service may lead to better fit of new product or service to users' needs. By integrating brand, design, and company-user interaction into the innovation process, a company may benefit from creating both tangible and intangible aspects of user experience. A contribution to entrepreneurship and innovation literature refers to the key elements of UDI that complement existing definitions of UDI by adding two additional aspects, i.e. searching for feedback and design orientation.

The results and propositions developed in the present study suggest managerial changes in order to accelerate new product development. Because they contribute to user experience, brand development, design and company-user interaction cannot be isolated from new product or service development. Rather, the elements need to be included in the process as an integral part of UDI from the very beginning of the development. Brand, design, and company-user interaction not only involve the look of a new product or service, but also reflect the understanding of users. Therefore, a critical point for brand development, design and company-user interaction already exists in the phase of researching user needs.

Since UDI is an emerging field of study, it raises more questions than answers. Therefore, we can identify several possibilities for future research. First, a greater clarity of UDI

methods is needed (Moor et al., 2010). A classification of methods and evaluation of their efficiency in producing innovative results would aid in understanding different innovation leverage in companies. General lists of UDI methods in the literature (Christiansson et al., 2008; Moor et al., 2010) are neither comprehensive nor categorized into a system that would be suitable for further quantitative research. Second, insight into strategic foundations of UDI is needed. This is beneficial not only for small but also for large and established companies. Strategic foundations lead to the implementation of UDI activities. Hence, by identifying strategic foundations of UDI, we obtain valuable insight into precedent factors for UDI inside the company. Comparisons across firms and industries should reveal additional information about UDI practices. Third, a process view of UDI would reveal new knowledge about the emergence of product or service identity through UDI. Fourth, empirical verification of propositions is needed. A quantitative research is feasible for testing hypothesis derived from propositions. Further qualitative and quantitative studies would also reveal additional theoretical contributions.

The limitations of the present study are connected with company perspective. The study implies the aspect of companies and not the aspect of users. User-based research would reveal additional insights into the UDI. Another limitation lies in a small sample. Nine interviews do not allow any definite conclusions. However, this study is an exploratory study with the primary aim of obtaining theoretical ideas for further empirical research.

Appendix 1

What is your thinking process when you develop new service/product? Concrete example.

How do companies develop their services/products?

In what ways do they integrate their users in product development? Example.

How else can companies integrate their users in product development?

In what ways is this beneficial?

How is this connected with business performance?

How do companies approach brand development?

How is brand development connected with new product development?

How is brand development connected with business performance?

If you have in your mind brand and innovation in the same time, how they are connected with business performance?

What are the possible threats in brand development?

What is the definition of company-user interaction?

How is user experience (with company/with product) connected with new product development?

How is user experience (with company/with product) connected with business performance?

In what ways can companies influence user experience?

How is design connected with new product development?

How is design connected with business performance?

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DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN SOUTH EAST EUROPEAN COUNTRIES AND NEW MEMBER STATES OF EUROPEAN UNION COUNTRIES

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Received: 3 December 2014

Accepted: 17 March 2015

ABSTRACT: *This paper accounts for the main determinants of Foreign Direct Investment stocks to 5-SEEC and the 10-New Member States of the EU countries by using an augmented Gravity Model. The study takes into account country specific institutional factors that determine foreign investors' decisions from 14 core European Union countries to invest into SEE-5 and EU-NMS-10 countries. From the results of the study we find that gravity factors and institutional related determinants like control of corruption, regulatory quality, political risk, corruption perception index, WTO membership and transition progress appear to significantly determine inward FDI stock from core EU countries to host economies of South East European region and new European Union member states.*

Keywords: *foreign direct investment, SEECs, panel econometrics, Gravity Model*

JEL Classification: F21

1 INTRODUCTION

Foreign Direct Investment (FDI) is considered to be the main source of foreign capital for transitional economies of South East European Countries (SEECs) and New European Member States (EU-NMS), (UNCTAD, 2013). This evolution occurred with the progression of transition from socialism to capitalism and the integration of the economies of SEECs and EU-NMS into international economic structures through trade and capital flows (Buch *et al*, 2003). Moreover, FDI in transitional economies of SEECs and EU-NMS can accelerate growth, institutional reforms, technological developments and infrastructure reforms in addition to providing capital account relief (Damijan *et al*, 2009; Bevan & Estrin, 2004).

The ongoing rise of Foreign Direct Investment has been a key element of globalisation process, and it has gained important weight over the past decades for enhancing growth prospects in transitional-developing economies (Janicki *et al*, 2004). UNCTAD reported that from 1990 to 2010 the world cumulative FDI inward rose from \$207,455 millions of dollars to \$1,243,671 millions of dollars, whereas in SEECs for the same period the cu-

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mulative FDI inward rose from \$71 million dollars to \$4,125 million dollars (UNCTAD, 2011). One reason for this growth of FDI is that an increasing share of countries' output is accounted for by foreign affiliates of international firms; therefore in recent decades dozens of countries have adopted laws to at least grant multinationals national treatment (Haskel *et al.*, 2002).

Therefore, analyzing the driving factors of FDI from developed to transitional economies has received increased attention in recent years (Bevan & Estrin, 2004; Maatev, 2008). However, actual FDI flows to transition SEECs and EU-NMS economies have been modest. During the period from 1994 to 2000 on average FDI to SEECs and EU-NMS represented only 0.14 per cent and 2.53 per cent of world FDI respectively. However, these did increase in the second decade, from 2001 to 2010 on average to 0.43 per cent and 3.42 per cent for SEECs and EU-NMS respectively (UNCTAD, 2013).

The aim of this paper is to use panel data on bilateral FDI stocks from individual developed source economies to transitional developing host economies between 1994 and 2010 for empirical analysis of the determinants of inward FDI stock to host economies of SEEC-5² and EU-NMS-10³ by focusing on market size, transaction cost and government policies as the determinants of FDI. The selected source EU-14 countries are the key suppliers of FDI for SEE-5 countries. The combined level of FDI outward stock of FDI in 2013 of EU-14 countries to EU-NMS-10 and SEE-5 countries accounted for 70 per cent (OECD, 2013). We keep out from our analysis some other transitional countries, as host countries of FDI, because circumstances throughout much of the period considered in this study make them special cases that would need country-specific explanations. Also, extending the data to other source countries would result in a high proportion of zeros or missing values.

The empirical strategy of the paper will be focused on advantages of location FDI, denoted by market size factors of source and host countries and ownership and internalization advantages of FDI, denoted by distance, host country institutional factors and transition progress (Dunning, 2001). These FDI are mainly coming from continental Europe and therefore several major global economies like the USA and Japan are under-represented in this study. Hence, EU-14 countries⁴ will be considered as the main source countries of FDI due to their main importance in terms of FDI in the SEE and EU-NMS-10 regions.

The empirical literature on FDI relies on analyzing FDI determinants into transition economies by using aggregate inflow data (Brenton *et al.*, 1999), or upon enterprise surveys (Meyer, 1998). Only a few studies analyze empirically the FDI determinants into transition economies, using panel data at a bilateral country level, to investigate whether FDI stocks into transition economies is driven by factor cost considerations or market op-

² Albania, Bosnia and Herzegovina, Croatia, Macedonia and Serbia

³ Bulgaria, Romania, Slovenia, Slovak Republic, Czech Republic, Hungary, Poland, Latvia, Lithuania and Estonia

⁴ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherland, Portugal, Spain, Sweden, and United Kingdom

portunity (Bevan & Estrin, 2004). This study will enrich the empirical literature on FDI determinants, using bilateral data at country level, by considering also institutional and transition-related factors as crucial ones that largely determine the size of FDI into transition economies. Moreover, the empirical study finds that FDI between the developed EU-14 countries and the transitional SEE-5 and EU-NMS-10 countries is determined by gravity factors, host country institutional factors, and transition progress.

The empirical approach follows the models of Buch *et al* (2004) and Bevan and Estrin (2004), which are based on the theoretical models of Helpman (1984), which largely explains FDI flows by factor endowment considerations (including institutions and by viewing FDI flows, as determined by gravity factors, like market size factors represented by Gross Domestic Product (GDPs) of source and host countries and transaction factors represented by country distances). Hence, the basic gravity model of FDI, in this study, is augmented by considering also host country institutional related factors and transition progress. Based on this, the study draws on policy recommendations for promoting FDI in the host countries. This paper by applying the standard methodology of the gravity model to the dataset of South East European countries and New European Member states contributes to the literature of institutional determinants of FDI in transitioning countries.

The paper is structured as follows. The following section proceeds with a presentation of empirical studies concerning gravity estimates of FDI determinants, being focused on empirical models and methodologies of relevant studies. The third section presents the methodology and the empirical model and describes data used. The subsequent section presents the results obtained by estimating the augmented gravity model. The last section summarizes the results and concludes.

2 LITERATURE REVIEW OF FDI DETERMINANTS USING GRAVITY MODEL

In recent years the gravity model has been considered one of the most used methods in empirical analyses of FDI flows between countries, usually using countries' market size factors denoted by GDPs and also geographical distance between the respective countries' capitals.

Stone and Jeon (1999), using cross-country observations of bilateral FDI flows during the 1987-1993 period for the Asia-Pacific, estimated how the gravity model specification can be used to estimate the bilateral flows of FDI. Based on Anderson (1979), using a general form of the gravity equation, in the form of the log - linear model, the authors explored the host country demand conditions, home country supply conditions and other economic factors either resisting or promoting the flows. The study confirmed that FDI flows in the region were determined by market size factors of the home country and income in the home country.

Brenton *et al* (1999), using pooled data with dummy variables for the period 1982-1995, assessed the influence of the deepening integration between the EU and the Central and

Eastern European Countries (CEECs) on FDI flows by addressing three major issues. First, they provided systematic estimates of the expected long – term level of FDI in the CEECs; second, they studied the relationship between FDI and trade; and third, they studied whether a raise in the attractiveness of the CEECs to foreign investors has affected the magnitude of FDI flows to other European countries. The source countries in the study were Austria, Finland, France, Germany, the Netherlands, Norway, Switzerland, the UK, the USA, Japan, and South Korea. The authors found substitution between FDI and trade for France, Germany, the Netherlands and Switzerland, whereas for the remaining source countries FDI and trade were complementary.

Buch *et al* (2003) found that the most significant determinants of FDI are the host country and market size variables denoted by GDP in PPP. The study found that GDP per capita, common language and common legal system had a positive impact on FDI stocks, whereas FDI restriction in the host country and distance had a negative impact on FDI inflows in the host country.

Bevan and Estrin (2004), using panel data and a gravity model for the period 1994- 2000, examined the flow of FDI from source countries like the USA, Switzerland, the EU, Korea and Japan to Central East European host countries. The result confirmed the expected results, showing that the most important determinants of FDI were unit labor cost and distance and market size variables denoted by GDP.

Egger and Pfaffemayer (2004b) studied the effect of distance as a common determinant of exports and FDI in a three factor New Trade Theory model: physical capital, human capital and labor endowment, assuming that the distance affects both pure trade costs and plant set – up costs. The authors analyzed this effect in the OECD and non-OECD countries (19 home countries and 57 host countries). Using bilateral industry level data on exports and outward stocks of FDI from the US and Germany to other economies (including both OECD and non-OECD countries), for the period 1989-1999, the authors showed that in accordance with New Trade Theory, bilateral exports increase with bilateral sum of GDP and similarity in terms of GDP, whereas bilateral stocks of outward FDI are an increasing function of the bilateral sum of GDP for both the US and Germany, and similarity in terms of GDP only in the case of the US. The authors found that United States exports and outward FDI are complements, with respect to changes in relative human capital endowments. In contrast, authors found that German FDI mainly takes place in countries which are slightly better endowed with human capital.

Bellak, Leibrecht and Damijan (2009), using a panel econometric analysis for the time span of 1995-2004 and augmented gravity model, studied the importance of corporate income taxes and infrastructure related variables as determinants of outward FDI flow in 8 CEECs from 7 home countries. The authors found that both taxes and infrastructure play an important role in the location decisions made by Multinational Companies, telecommunication and transport infrastructure are of special importance to FDI and the tax - rate sensitivity of FDI decreases with the level of infrastructure endowment. Controlling for the interaction between taxes and infrastructure the authors found positive and signif-

icant effect of interaction term on outward FDI. The results of the study imply that among the various types of infrastructure information and communication infrastructure is more important than transport infrastructure and electricity generation capacity and the tax rate elasticity of FDI is a decreasing function of infrastructure endowment meaning that the infrastructure endowment generates location - specific and immobile “infrastructure rents”, which can be taxed without a loss of FDI.

The Gravity Model is mostly used on empirical models of investment and trade studies (Anderson 1979; Bergstrand, 1985, 1989 ; Brenton et al, 1999; Buch et al, 2003; Bevan & Estrin, 2004; Egger & Pfaffemayer, 2004a). This study uses the Gravity Model to test the determinants of FDI in SEE-5 and 10 New Member States of EU.

3 TRENDS IN FDI

The significance of FDI in transitional economies of SEE can be seen through the relative indicator of FDI inward stock as a percentage of Gross Domestic Product (GDP) in the relevant country (Table 1). Thus, this indicator allows us to uncover the potential effect of accumulated FDI on the overall national economic productivity. As viewed in Table 1, the SEECs became much more desirable to investors during the years after 2005. In 2005, the highest FDI stock as a percentage of GDP was recorded in Macedonia (34.9 per cent), Croatia (32.5per cent) and Bosnia (21.0per cent). The poorest countries in terms of inward FDI stock in 2005 were Albania (12.05 per cent) and Serbia (20.3 per cent). However, in the subsequent years Croatia recorded the highest inward FDI stock, leaving behind the other SEE countries.

Table 1: *Inward FDI stock as a share of GDP in SEEC-5 and EU-NMS-10, in per cent*

Years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
Albania	6.8	8.0	8.1	8.5	11.4	12.5	15.5	25.2	22.1	27.0	27.7	34.6	38.4	48.3	21.0
Bosnia	19.5	20.7	21.8	18.4	22.5	21.0	25.6	35.1	32.7	40.4	39.6	38.6	42.7	44.5	30.2
Croatia	13.0	16.9	22.9	25.2	30.3	32.5	54.9	75.9	44.8	59.3	59.5	50.0	56.3	56.1	42.7
Macedonia	15.0	26.6	31.9	34.3	39.8	34.9	42.1	45.9	42.0	48.6	47.5	46.0	51.6	54.7	40.1
Serbia	10.5	9.5	10.3	14.3	15.6	20.3	31.1	34.6	44.2	57.5	67.2	63.3	76.2	77.9	38.0
Bulgaria	21.0	21.2	25.8	30.8	40.0	47.9	70.7	90.1	85.0	101.4	99.0	88.5	96.6	99.6	65.5
Romania	18.6	20.5	17.1	20.5	27.0	26.0	37.0	36.9	33.2	43.8	42.6	39.1	46.1	45.4	32.4
Slovenia	14.5	12.6	17.9	21.9	22.5	20.3	23.1	30.4	28.9	31.1	31.1	30.2	34.1	32.5	25.1
Slovakia	34.2	38.5	50.8	65.4	66.8	61.8	69.1	63.6	53.5	60.2	57.7	54.2	61.1	61.5	57.0
Czech R	36.8	42.1	49.3	47.5	50.2	46.6	53.8	62.3	50.2	63.8	64.7	55.8	69.5	68.6	54.4
Hungary	49.3	52.0	54.6	57.9	60.4	55.4	71.2	70.2	57.1	78.0	71.2	62.2	83.1	85.6	64.9
Poland	20.0	21.7	24.4	26.7	34.3	29.9	36.8	42.0	31.0	43.0	45.9	39.4	48.0	48.8	35.1
Lithuania	20.3	21.8	28.0	26.5	28.2	31.5	36.4	38.3	27.3	35.7	36.2	33.1	37.9	37.1	31.3
Latvia	26.8	28.3	29.8	29.4	33.0	30.9	37.7	37.8	34.5	44.9	44.6	42.5	47.8	50.6	37.0
Estonia	46.6	50.5	57.8	71.2	83.5	81.1	75.6	76.2	69.0	86.6	87.7	75.2	86.5	87.7	73.9

Notes: Inward FDI stock as a percentage of GDP.

Source: UNCTAD, 2014; own calculation.

In 2010 and subsequent years the situation changed in favour of Serbia. In 2010 this country received the highest FDI inward per capita, (67.2 per cent), leading Croatia (59.5 per cent) and Macedonia (47.5 per cent). The Macedonian FDI stock per capita during the observed period registered a steady rise from the years 2001 to 2008, reaching its peak in 2013 at (54.57 per cent). However, on average, the highest proportional shares of FDI stocks per capita during the observed period were registered in Croatia (42.7per cent), Macedonia (40.1 per cent), and Serbia (38.0 per cent), which left Bosnia (30.2 per cent) and Albania (21.0per cent) behind. In relation to other CEE countries, a significant amount of FDI stock per capita, on average during the observed period, was recorded in Estonia (73.9 per cent), Bulgaria (65.5 per cent), Hungary (64.9 per cent), Slovakia (57.0 per cent) and Czech Republic (54.4per cent), surpassing other CEEC with amounts below 50 per cent. However, in Table 1 one can notice that SEE countries are becoming more attractive locations for foreign investors, especially after the year 2005, thus changing the perception of foreign investors toward economic conditions of SEE countries. This potential change of pattern can be the result of improvement of macroeconomic stabilization policies and stable conditions for investment in the SEE area. Another point of view may be the successful negotiations between the SEE countries and the EU leading in time to their membership in the EU. This fact in turn means that the region has successfully completed its transitional period and abandoned the national conflicts and their cataclysmic results of earlier wars and political and ethnic conflicts.

The previous section has highlighted the trends of FDI inward stock as a percentage of Gross Domestic Product for EU-NMS-10 and SEE-5. However to explain the rise of intra - regional FDI between these groups of countries, the following section undertakes an empirical examination of some of the potential determinants of FDI stock from EU-14 countries to EU-NMS countries and SEE countries over the period 1994-2010, by considering FDI outward stock level from EU-14 countries to the rest of the region.

4 METHODOLOGY, EMPIRICAL APPROACH AND DATA

In line with the theoretical framework of FDI determinants, we consider the role of geography in explaining FDI pattern among SEE and EU-NMS countries and other policy factors either resisting or promoting FDI by using the conceptual framework of the gravity model. The reduced form of the model including related selected variables is given below:

$$\ln fdi_{ij,t} = a_{ij} + u_t + \beta_0 \ln gdp_{i,t-1} + \beta_1 \ln gdp_{j,t-1} + \beta_2 \ln |gdp_{i,t-1} - gdp_{j,t-1}| + \beta_3 \ln x_{jt} + \beta_4 \ln y_{jt} + \beta_5 \ln y_{jt} \times d + \phi + \delta + \theta + \varepsilon_{ij,t} \quad (1)$$

Where $fdi_{ij,t}$ is a bilateral FDI stock from source country i to host country j at time t , in millions of US dollars. $gdp_{ij,t-1}$ represents market size variables denoting the gross domestic product, in millions of US dollar in source and host country, respectively. Both variables are lagged by 1 time period, in order to control endogeneity problems between FDI and GDP. We use the absolute difference of GDP per capita variable between source country

and host country at time t $|gdp_{i,t-1} - gdp_{j,t-1}|$ as measures of factor endowment differentials between countries. The absolute difference of GDP per capita, between source and host country, will allow us to control for serial correlation between GDP and GDP per capita variable (Greene, 2013). The country-pair specific effects, a_{ij} captures all the time invariant factors, such as distance, common land border, common language etc, while u_t is a time dummy, φ is host country dummy, σ is source country dummy and θ is pair country dummy, x_{jt} represent the vector of host country explanatory variables and y_{jt} stands for host country institutional related variables. The interaction terms, $y_{jt}d$ is included in the model to estimate the determinants of inward FDI stock in SEE-5 countries. The EU-NMS-10 country group is taken as control group ε_{ijt} is the standard error term.

4.1. Empirical model

Following the work of Bevan and Estrin (2004, Johnson (2006) and Mateev (2008) applied to OLI framework, we employ the gravity model for explaining FDI patterns, among countries that have invested in the SEE-5 countries and EU-NMS-10. For estimation purposes, the extended gravity equation for FDI stocks in SEE and EU-NMS-10 countries is specified in the equation (2)⁵:

$$\begin{aligned} \ln fdi_{ij,t} = & a_{ij} + u_t + \beta_0 \ln gdp_{i,t-1} + \beta_1 \ln gdp_{j,t-1} + \beta_2 \ln d_{ij} + \beta_3 \ln |gdp_{i,t-1} - gdp_{j,t-1}| + \beta_4 smctry_{ij} \\ & + \beta_5 wto_{jt} + \beta_6 bfdi_{jt} + \beta_7 \ln op_{j,t-1} + \beta_8 \ln bex_{j,t-1} + \beta_9 \ln sch_{jt} + \beta_{10} \ln cpi_{jt} + \beta_{11} \ln cc_{jt} + \beta_{12} \ln rq_{jt} \quad (2) \\ & + \beta_{13} \ln gov_{jt} + \beta_{14} \ln rl_{jt} + \beta_{15} \ln pr_{jt} + \beta_{16} \ln va_{jt} + \beta_{17} \ln cpi_{jt} \times d + \beta_{18} \ln cc_{jt} \times d + \beta_{19} \ln rq_{jt} \times d \\ & + \beta_{20} \ln gov_{jt} \times d + \beta_{21} \ln rl_{jt} \times d + \beta_{22} \ln pr_{jt} \times d + \beta_{23} \ln va_{jt} \times d + \phi + \delta + \theta + \varepsilon_{ij,t} \end{aligned}$$

where i denotes individual source countries, j denotes individual receipt countries, t denotes the years from 1994 to 2010. The empirical model assumes that bilateral FDI in SEE and CEE countries is a function of GDP, absolute difference of GDP per capita, distance, language, cultural and border similarities, world trade organization membership of host economy, bilateral FDI agreement, trade openness, bilateral exports from country j to country i , schooling, transition progress, corruption perception index and world governance indicators like control of corruption, regulatory quality, government effectiveness, rule of law, political risk and voice and accountability.

4.2. Data description and hypothesis

Along the lines of previous research, the dependent variable fdi_{ijt} is defined as the bilateral stock of FDI from source country i to host country j at time t . The source of this data is the OECD. The FDI stocks are measured at current prices and current exchange rate in millions of US dollar. The FDI stock variable contains a large number of zero observations

⁵ Description of the variables used in the empirical model is given in appendix, table 4. Descriptive statistics of the variables employed in the model is given in appendix, table 5.

and negative values. To avoid this problem we transform the FDI stock variable⁶. The use of FDI stock variable instead of its alternative of FDI flow has an advantages to capture the time lag effects which is not the case with FDI flows.

Using gravity framework, the expected economic factors that determine the size of FDI bilateral are: the market size factors represented by GDP and absolute difference of GDP per capita between source and host countries and transaction cost factor representing the distance. In the empirical model we include the variables of gdp_{it} and gdp_{jt} to consider the market size of host and source country. The empirical literature suggests positive relationship between market size factors and the size of FDI (Bevan & Estrin, 2004; Johnson, 2006; Mateev, 2008). The explanation is that the bigger the host country GDP the larger the FDI, since larger economies become more attractive for foreign capital. The larger the origin country of FDI the more FDI should emerge from this country; and the larger the market size of a host country the more FDI it should receive. Thus, for both variables we expect positively signed coefficients. The source of this data is UNCTAD. In the empirical model we also include the variable of the absolute difference of GDP per capita between countries to capture the market size differentials between countries, as well as factor endowments differentials between countries. In line with the Linder hypothesis (1961), it can also be taken to account for the differences in consumer tastes between countries. Moreover, considering the Linder's preference-based theory (1953), the effects of country characteristics, denoted by GDP per capita on FDI, do not accord well by including the respective levels of GDP per capita for both countries, but, rather by considering the absolute differences of GDP per capita between countries (Frankel *et al.* 1995)⁷. Based on the concept of cost comparative differences and combined tastes between countries, it is expected that high income EU-14 countries will focus their investments more to relatively low income EU-NMS-10 and SEE-5 countries. Hence, it is expected positive impact of the absolute difference of GDP per capita variable on FDI. However, the empirical literature suggests both, positive and negative relationship between factor cost differentials and FDI (Globerman & Shapiro, 2002). The positive (negative) sign of this variable may also be due to the fact that differences in wage levels are compensated (not compensated) by productivity (Bergstrand, 1989). The source of the data for this variable is UNCTAD.

The transaction cost variable in this study is represented by the distance between source and host country. The variable of distance lnd_{ijt} represents gravity factor. Distance between source and host country is expected to have a negative effect on the size of FDI stocks,

⁶ This variable contains a large number of zero and negative observations. Therefore, to account for zero and negative observations in the matrix of bilateral FDI variable, we transform this variable by taking the logarithm of the absolute value of FDI increased by 1. By this transformation we take care of zero observations, and negative values are retained and the coefficients from an OLS regression can still be interpreted as elasticity's (Guerin and Manzochi, 2006; Silva and Tenreyro, 2006;2008). The transformed dependent variable is used in dynamic GMM estimation methodology. In standard fixed effects and LSDV estimates we use the untransformed bilateral FDI stock variable as a dependent variable.

⁷ With aggregate data, at country level, there is more reason to focus on bilateral differences in comparative advantages and tastes (reflected by the absolute differences in GDP per capita) to explain aggregate bilateral FDI between different countries, with respect to income level. This is a reflection that all countries possess comparative advantages or preferences for something.

due to costly adoptions of goods to local preferences (Johnson, 2006) and high transportation cost (Bevan & Estrin, 2000; Resmini, 2000). The variable of distance is measured by the actual route distance from the economic centres (generally, capital cities) between source and host countries, in kilometres. This variable is used in the model to proxy for the transaction, transportation cost and physical cost of foreign investments⁸. According to Resmini (2000), greater distance presents weaker trade ties between the FDI source country and the host country, thus providing for lower FDI stock levels. Typically, empirical studies proxy trade costs with bilateral distance.

However, a number of additional variables are also customarily used. In this regard, the model includes also additional gravity factors through dummy variables, like $smctry_{ij}$ which is a dummy variable that takes value one when two countries share a border, a language or were the same country in the past, correspondingly. In all the cases, the coefficient is expected to be positive. This variable is used to capture information costs and search costs, which are probably lower for foreign investors whose business practices, competitiveness and delivery reliability are well known to one another. Firms in adjacent countries, or countries with common relevant cultural features, are likely to know more about each other and to understand each other's business practices better than firms operating in less – similar environments. The source of the data for $smctry_{ij}$ is CEPII.

The variable of openness denoted by $lnop_{ijt}$ is included in the model to account for the openness level of the SEE countries (Bos & De Laar, 2004). This variable is measured by the sum of exports and imports over GDP. The variable of openness is used to capture the liberalization of trade and foreign exchange transactions. The fewer restrictions a host country imposes on trade the higher will be the FDI attracted by this country. Therefore, a positive relationship between openness and FDI stock is expected. The source of the data consisting of the openness variable, like exports, imports and GDP, is UNCTAD.

The variable $lnbex_{ji,t-1}$ is considered in the model to account for bilateral exports from host country j to source country i . This variable is lagged by one time period to allow the bilateral exports the grace period before it starts impacting host country's inward stock of FDI. It is expected that host country bilateral exports to encourage more FDI. Hence, export oriented economies may be more successful in encouraging FDI. Therefore it is expected positive relationship between lagged bilateral exports and FDI. The source of the data for bilateral exports is OECD.

The variable $lnsch_{jt}$ accounting for years of schooling of the host country population is measured by tertiary school enrolment as a per cent of gross school enrolment. This variable will account for efficiency-seeking motives of FDI, capturing the human capital developments in the host country (Borensztein, De Gregorio and Lee, 1998). According to the research literature, there is a strong positive relationship between FDI and the level of educational attainment in the domestic economy. In line with Borensztein, De Gregorio, and Lee (1998), this variable is expected to present a positive relation to FDI: the more educated the workforce,

⁸The source of this variable is <http://www.geobytes.com>.

the greater the incentive for investment, since a better educated workforce yields higher returns. Data is obtained from the World Bank database on education.

We augment the gravity model by considering additional explanatory variables that are expected to be significant FDI determinants. Therefore, considering the empirical work of Holland and Pain (1988), Garibaldi *et al* (2001), Kinoshita and Campos (2004), Bevan and Estrin (2004), we find that the importance of institutional development factors is significantly important for investment decisions of foreign investors. Moreover, the quality of institutions is crucially important for less developed SEE countries. In the study we proxy for the quality of institutions in the host country through the World Bank's Worldwide Governance Indicators (WGI), which include six relevant measures, on per centile rank values, like control of corruption, regulatory quality, rule of law, government effectiveness, political risk and voice and accountability. These measurements are used in the study in order to account for institutional quality and advancement issues (economic and political institutions).

The index of control of corruption $lncc_{jt}$ captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. It is expected that control of corruption will be negatively associated with bilateral FDI. The index of regulatory quality $lnrq_{jt}$ measures perception of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. It is expected that regulatory quality index will be positively related to bilateral FDI. The index of rule of law $lnrl_{jt}$ measures the perceptions of the extent to which economic agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence. It is expected that economic agents' confidence in host country institutional system, represented by quality of contract enforcement and property rights, will be positively related to bilateral FDI. The index of voice and accountability $lnva_{jt}$ captures perception of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. The political stability index $lnps_{jt}$ captures the perception of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically – motivated violence and terrorism. The government effectiveness index $lngov_{jt}$ captures perception of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation and the credibility of the government's commitment to such policies. In general, it is expected that bilateral FDI from source to host country will increase as the overall institutional conditions in the SEE-5 and EU-NMS-10 host countries improve. Therefore, a positive relationship between FDI and host country governance indicators is expected.

The variable $lntp_{jt}$ is included in the model to capture the transition progress of host country institutions. Following Mrak and Rojec (2013), this variable is constructed by the sum of seven EBRD transition specific indexes, i.e. the indexes denoting large scale privatization, enterprise restructuring, competition policy, banking reforms and interest rates liberalization, securities markets and non-bank financial institutions, and infrastructure

reform. It is expected that the transition progress will be positively associated to bilateral FDI stock. The source of the data for this variable is European Bank of Reconstruction and Development (EBRD).

Additionally, Transparency International Corruption Perception Index, (CPI) is included in the study to address the level of perceived corruption and to capture the investment climate in the host countries. The variable $incpi_{ijt}$ is measured by perceived corruption on a continuous scale from 1 to 10. In the model, we account for the effects of corruption as an institutionally related determinant. The data is collected from the Transparency International's website. The variable is expected to have a positive relationship with the FDI stock, since a higher value of the corruption index indicates a less corrupt business environment in the host country.

However, in the study there are also other institutional dummy variables included. The dummy variables, such as wto_{jt} , $bfdia_{ijt}$ are included in the model in line with the business network theory of FDI stocks, to denote institutional factors affecting FDI stocks s into SEE countries. In this regard, wto_{jt} is included in the model to denote the membership of the receipt country of FDI into the World Trade Organization (WTO). The source of this data is the WTO database. The variable $bfdia_{ijt}$ is included in the model to denote bilateral investment treaties between country i and j at time t . The source of the data for bilateral investment treaties is UNCTAD.

Finally, to address the question of whether the main institutional determinants of FDI are different across the two group of countries (SEE countries versus EU NMS), in the estimated model, we introduce the interaction variables between SEE dummy variable d and host country institutional variables. These variable are included in order to differentiate between the overall potential for FDI between the SEE-5 and EU-NMS-10 countries. It is expected that inward stock of FDI may, to a certain extent, be independent of the above country-specific determinants and will be related to the geographic region of SEE that has been plagued by political instability and war for the important part of the time period under consideration. Therefore, the SEE-5 countries may be considered as less attractive locations for FDI. ε_{ijt} is the usual standard error.

5 ECONOMETRIC ISSUES

For estimation purpose we use different methodologies. In this regard, in the study we consider both static panel models and dynamic panel models. We start with the fixed effect (FE) estimates and Least Square Dummy Variable (LSDV) estimates accounting for country (source and host country) fixed effects, time fixed effects and index dummies. The LSDV estimates are presented in order to estimate the pure effect of each individual explanatory variable, accounting also for unobserved heterogeneity (Greene, 2013). This methodology also identifies individual – country specific and time effects.

However, the static panel data approach may lead to biased parameter estimates as it does not take into account the potential endogeneity of explanatory variables. Moreover the

standard static panel model does not correct the biases due to the presence of the lagged dependent variable. Therefore, the use of pooled ordinary least squares (OLS), fixed effects accounting for country and time specific effects would be inappropriate, since endogeneity would bias the results. To check for the robustness of our results obtained using the static panel data techniques, we run dynamic panel data regression using Arellano-Bover/Blundell/Bond estimation procedure (Arellano & Bover, 1995; Blundell & Bond, 1998). This procedure employs the Generalized Method of Moments (GMM), estimation technique to generate more efficient and consistent parameter estimates.

6 RESULTS

In this section we present the empirical results. We discuss the economic interpretation of models summarized in table 1 and 2. All the above-mentioned methodologies are presented for estimating the determinants of bilateral FDI. However, every method has advantages and disadvantages. For this reason, as it has become a common practice in empirical literature, we report the results of the all above mentioned estimation methods for the same database.

6.1. Discussion of results from static panel models

In this section we present the estimated coefficients of the augmented gravity model using standard baseline Fixed Effect (FE) estimates, (column 1 and 2) and Least Square Dummy Variable (LSDV) estimates accounting for country fixed effects, time fixed effects and index dummies (column 3 and 4). To consider whether the institutional determinants of FDI are different across two groups of host countries of (SEE-5 and EU-NMS-10 countries), the results with interactions of SEE-5 dummy variable with host country institutional factors are presented in columns 1 and 3. Additionally, as a benchmark category of these estimates, we also present the results without interaction terms (columns 2 and 4). In this case we consider the whole sample of host SEE-5 and EU-NMS-10 countries as one group of host countries of FDI.

Considering these estimates, as Bevan and Estrin (2004) find, the positive and significant coefficients of host and source country GDP and the negative and significant coefficient for distance indicates that FDI is determined by gravity factors, as expected. Hence, our results are consistent with a transaction cost analysis of FDI in which FDI stocks are attracted between relatively large economies, but the gains from overseas production diminish with distance from the source country. Host country GDP and source country GDP is positive and significant in all specifications. This suggests that the income level and the size of host and source country market is an important determinant for foreign investors. A negative and significant coefficient of distance indicates that FDI stocks are determined by gravity factors as expected. On the other hand, the positive coefficient of host country GDP and negative coefficient of distance support the market – seeking hypothesis of FDI. Focusing on LSDV estimates from column 4 the estimated gravity coefficients

can be interpreted as follows. Source and host country GDP has a positive and significant impact on bilateral FDI, with an elasticity of 0.148 and 0.518. An increase in source and host country GDP by 1 per cent, increases bilateral FDI stock from source to host country, on average by 0.14 and 0.51 per cent, respectively, *ceteris paribus*. The same estimates, are confirming that an increase in the road distance between capital cities of source and host country by 1 per cent will decrease bilateral FDI stock from source to host countries, on average, by 4.3 per cent, *ceteris paribus*. We find that the coefficient of *same country*, indicating common border, common language or cultural similarities between source and host country at the same time, are negatively associated to bilateral FDI stock. The explanation of this result is that countries in the sample that are close to each other do not have much bilateral FDI stock. Hence, the model predicts that bilateral FDI stock between two contiguous countries is 94.54 per cent lower than FDI between countries that do not share a common border⁹. The findings from the FE models (columns 1 and 2) are confirming a negative effect of absolute difference of GDP per capita between countries on the size of bilateral FDI stock. The estimated elasticity of GDP per capita difference variable is -0.326 in the model of FE estimates with interactions. (column 2). The negative side of this variable may be attributed to the fact that differences in wage levels between countries are not compensated by productivity (Bergstrand, 1989). Hence, 1 per cent increase of GDP per capita differences between countries is associated with, on average, 0.3 per cent decrease of inward FDI stock in the host countries, *ceteris paribus*.

However, the market size factors denoted by GDP variables and other gravity factors like distance and geographical and cultural proximity are important determinants of FDI, but their importance decreases as the host country is achieving to attract more FDI. Other transition and institutional related factors became more important as it is confirmed in recent empirical literature. The same estimates are showing that host country institutional dummy variable of WTO membership is significant and positively related to bilateral FDI stock, indicating that host country WTO membership is associated with an increase of FDI. Focusing on LSDV estimates (column 4), the estimated impact of transition progress on FDI is 2.936, indicating that advancements of host country transition reforms with respect to large and small scale privatisation, enterprise restructuring, competition policy, infrastructure reforms and the reforms in non-bank financial institutions, by 1 per cent, is associated with average increase of bilateral FDI stock into host countries by 2.93 per cent, *ceteris paribus*.

To capture the partial effect of institutional development on the size of inward stock of FDI in SEE countries, the institutional variables are interacted with see dummy variable. Focusing on LSDV estimates (column 4), the estimated coefficient of CPI index for EU-NMS-10 countries, in the equation of FDI is -0.849, per cent. For SEE-5 countries it is 0.793 per cent (-0.849+1.642). The difference 1.642 per cent, or one and a half percentage point more for SEE-5 countries, is economically large and statistically significant at 1 per cent level of significance. Thus, we conclude that there is sufficient evidence against the hypothesis that the size of inward FDI stock does not vary with respect to CPI index,

⁹ The formula to compute this effect is $(e^{b_i} - 1) \times 100$, where b_i is the estimated coefficient.

Table 2: Results from static panel models with and without interactions

VARIABLES	(1)	(2)	(3)	(4)
	Fixed Effects	Fixed Effects	LSDV	LSDV
Log of GDP in source country (-1)	0.142* [1.88]	0.147* [1.95]	0.175** [2.13]	0.148* [1.80]
Log of GDP in host country (-1)	0.746*** [8.70]	0.768*** [8.84]	0.623*** [2.93]	0.518** [2.30]
Log absolute diff of GDP capita (-1)	-0.382*** [-2.70]	-0.326** [-2.24]	-0.136 [-0.81]	-0.141 [-0.84]
Log of distance			-2.068*** [-12.19]	-4.376*** [-8.45]
Same country			-4.445*** [-2.82]	-2.909** [-1.99]
WTO membership	0.482*** [4.20]	0.542*** [4.62]	0.190 [1.55]	0.280** [2.22]
Bilateral FDI agreement	-0.007 [-0.06]	0.127 [1.08]	-0.136 [-1.17]	0.011 [0.09]
Log of openness (-1)	0.242 [1.34]	0.234 [1.28]	-0.244 [-1.01]	-0.226 [-0.92]
Log of bilateral exports (-1)	0.006 [0.24]	0.008 [0.32]	-0.000 [-0.02]	0.000 [0.01]
Log of schooling	0.813*** [5.93]	0.736*** [5.31]	0.051 [0.27]	0.049 [0.26]
Log of transition progress	5.973*** [13.54]	5.634*** [11.80]	3.144*** [5.00]	2.936*** [4.45]
Log of corruption perception index	-0.308 [-1.24]	-0.826*** [-2.91]	-0.252 [-0.94]	-0.849*** [-2.71]
Log of control of corruption	-0.508** [-2.21]	-0.618* [-1.89]	-0.076 [-0.31]	-0.160 [-0.46]
Log of regulatory quality	0.664* [1.84]	1.517*** [3.21]	0.920** [2.43]	1.588*** [3.24]
Log of government effectiveness	0.287 [1.06]	0.681* [1.67]	0.613** [2.15]	1.095** [2.53]
Log of political risk	-0.475*** [-2.84]	-0.577*** [-2.82]	-0.452** [-2.42]	-0.567** [-2.46]
Log of voice and accountability	-0.520 [-1.38]	-0.223 [-0.35]	-0.870** [-2.27]	0.209 [0.31]
Log of rule of law	-0.439 [-1.35]	-0.208 [-0.61]	-0.470 [-1.41]	-0.290 [-0.82]
Log of corruption perception index*d		2.007*** [3.48]		1.642*** [2.83]
Log of control of corruption*d		-0.404 [-0.84]		-0.214 [-0.45]
Log of regulatory quality*d		-2.375*** [-3.47]		-1.947*** [-2.80]
Log of government effectiveness*d		-0.108 [-0.18]		-0.270 [-0.45]
Log of political risk*d		0.650* [1.77]		0.613 [1.62]
Log of voice and accountability*d		-0.651 [-0.82]		-1.626* [-1.95]
Constant	-17.131*** [-8.75]	-21.156*** [-7.55]	5.055 [1.34]	14.329*** [3.55]
Source and host country dummy	No	No	Yes	Yes
Time and index (country - pair) dummy	No	No	Yes	Yes
Observations	1,767	1,767	1,767	1,767
R-squared	0.664	0.670	0.923	0.924
Number of groups	170	170		

Notes: Dependent variable is log bilateral FDI stock. t-statistics in brackets, ***, ** and * indicate significance of coefficients at 1, 5 and 10 per cent, respectively.

between SEE-5 and EU-NMS-10 countries. These results indicate that 1 per cent increase in the CPI index, which is associated with lower perceptions by host country population toward corruption presence in the business environment, the size of bilateral FDI stock into host countries SEE-5 countries increases by 0.79 per cent, *ceteris paribus*. On the other hand, the negative coefficient of CPI index for the benchmark category of EU-NMS-10 countries indicate that bilateral FDI stock into EU-NMS-10 countries, originated from EU-14 countries, decrease as the business environment in the former group of countries is perceived to be less corrupted.

The estimated coefficient of regulatory quality for EU-NMS-10 countries in the selected LSDV estimates (column 4), is 1.558 per cent. For SEE-5 countries it is -0.389 per cent (1.558-1.947). The difference -1.947 per cent, or 2 percentage points less for SEE-5 countries, is statistically significant. Thus, we conclude that the size of inward FDI stock vary with respect to perceptions of SEE-5 and EU-NMS-10 countries governments to promote private sector developments. The results indicate that a 1 per cent increase in regulatory quality index is associated with 0.4 per cent decrease of inward FDI stock in SEE-5 countries, *ceteris paribus*. Hence, sound regulation policies that promote private sector developments in SEE-5 countries are not contributing to inward stock of FDI. The size of regulation policies on the private sector for SEE-5 countries is found to be critical factor on foreign capital accumulation, in the form of FDI. The explanation that lay behind the scope of this interpretation can be attributed to biasness and inconsistency of private sector-regulation policies, for SEE-5 countries, thus confirming the regional predispositions toward this inconsistency, concerning regulation policies being applied for FDI attraction motives.

The positive coefficient of regulatory quality for the benchmark category of EU-NMS-10 countries indicate that bilateral FDI stock into EU-NMS-10 countries, originated from EU-14 countries, increase as the private sector-regulation policies in the former group of countries are perceived to be well promoted. The estimated coefficient of political risk in the LSDV model (column 4), for EU-NMS-10 countries is -0.567 per cent. For SEE-5 countries it is 0.046 per cent (-0.567+0.613).

The difference of 0.613 per cent, or just below one half percentage point more for SEE-5 countries, is statistically insignificant. However, in fixed effect model (column 2), this difference is statistically significant at 1 per cent level of significance¹⁰. The coefficients size, below 1 in absolute value, of political risk indexes for EU-NMS-10 countries and SEE-5 countries, indicate that foreign investors are not sensitive to changes in political risk indexes between countries, although the size of inward FDI stock between SEE-5 and EU-NMS-10 countries is not the same with respect to changes in political risk index, between countries. Hence, a 1 per cent increase in the political risk index (associated with host country governmental destabilization by unconstitutional means), increases (decreases)

¹⁰ The estimated elasticity of political risk for the benchmark category of EU-NMS-10 countries is -0.577, or -5.7 per cent. For SEE-5 countries the estimated elasticity is 0.073 per cent. Hence, the difference of 0.613 per cent, confirms statistically significant interaction term between SEE-5 dummy and political risk, which favours the hypothesis that size of bilateral inward FDI stock between SEE-5 and EU-NMS-10 countries, vary with respect to political risk index

the average bilateral FDI stock in SEE-5 countries (EU-NMS-10 countries) by 0.4 per cent and 0.5 per cent, respectively, *ceteris paribus*.

6.2 Discussion of results from dynamic panel models

We introduce the dynamic panel estimates to account for the endogeneity associated with the dependent variable. Following Roodman's (2006) approach we have employed the strata command *xtdpdsys*. The new *xtdpdsys* jointly offer most of *xtabond2*'s features, while moving somewhat towards its syntax and running significantly faster (Roodman, 2006). The lagged dependent variable and all the institutional variables, bilateral exports and GDP are endogenous, whereas openness and schooling are exogenous. Following Roodman (2006), we use only one lag for the dependent variable in the GMM and exclude distance and all dummy variables employed in static panel models, like: *smctry*, *see dummy*, *wto membership* and *bilateral FDI agreement*. In the estimates, the Wald statistics reports the joint significance of the explanatory variables.

The *p-value* of 0.00 of the Wald test in all specifications suggests rejection of the null hypothesis that the independent variables are jointly zero. The estimates from GMM specification are confirming theoretically expected results. The estimated coefficient of the lagged dependent variable is significant and positive in the GMM estimates, implying that there are significant persistence effects, which supports the use of GMM. The results confirm that an increase of agglomeration effect of FDI by 1 per cent, results in an increase of further FDI stock into host countries, by 0.6 per cent. Therefore, there is an indication that FDI agglomerations are concerned with further FDI movements. The market size coefficients of GDP in source and host countries are significant and positive, as expected and confirmed in static panel models.

Table 3: Results from dynamic panel models, GMM

VARIABLES	(5) One step results GMM estimates	(6) One step results GMM estimates
Lagged dependent variable	0.689*** [44.72]	0.692*** [44.96]
Log of GDP in source country	0.309*** [4.63]	0.352*** [5.60]
Log of GDP in host country	0.213*** [5.58]	0.195*** [5.36]
Log of GDP per capita difference	-0.093 [-1.19]	-0.066 [-0.85]
Log of bilateral exports	0.104*** [4.89]	0.112*** [5.31]
Log of transition progress	0.852*** [3.45]	1.080*** [4.11]
Log of corruption perception index	-0.386*** [-2.60]	-0.281* [-1.68]
Log of control of corruption	0.054 [0.51]	0.237 [1.24]
Log of regulatory quality	-0.044 [-0.23]	0.121 [0.42]
Log of government effectiveness	-0.215* [-1.83]	-0.171 [-0.72]
Log of political risk	0.209** [2.45]	-0.157 [-1.07]
Log of voice and accountability	0.098 [0.59]	-0.337 [-1.05]
Log of rule of law	-0.396*** [-2.91]	-0.373*** [-2.82]
Log of corruption perception index*d		0.090 [0.31]
Log of control of corruption*d		-0.208 [-0.90]
Log of regulatory quality*d		-0.696** [-2.21]
Log of government effectiveness*d		0.003 [0.01]
Log of political risk*d		0.389** [2.17]
Log of voice and accountability*d		0.441 [1.29]
Log of openness	0.085 [0.75]	0.039 [0.37]
Log of schooling	0.346*** [5.06]	0.228*** [3.56]
Constant	-6.699*** [-6.74]	-6.076*** [-6.13]
Sargan test, χ^2	1586.876	1639.471
P - value > χ^2	0.0000	0.0000
Wald, χ^2	12314.71	13761.17
Prob > χ^2	0.0000	0.0000
Number of instruments	780	851
Observations	3,248	3,248
Number of groups	210	210

Notes: Dependent variable is log bilateral FDI stock z-statistics in brackets, ***, ** and * indicate significance of coefficients at 1, 5 and 10 per cent, respectively.

The coefficient of bilateral exports is significant and positive in both GMM estimates. This indicates that an increase of bilateral export from exporting SEE-5 and EU-NMS-10 to importing EU-14 countries, by 1 per cent increases the inward stock of FDI from source EU-14 to host SEE-5 and EU-NMS-10 countries by 0.1 per cent, *ceteris paribus*. This result suggests that the increase of bilateral exports of host SEE-5 and EU-NMS-10 countries serves as a channel through which FDI activity in the exporting countries expand. The positive relationship between bilateral exports and bilateral FDI stock, on the other hand, confirms the complementarities between bilateral exports and bilateral FDI for both groups of countries.

Referring to the same estimates (see column 5 and 6), we find significant coefficients of schooling. The estimated elasticity of schooling is 0.228 indicating that a 1 per cent increase in tertiary school enrolment will increase bilateral FDI stock, from EU-14 to SEE-5 and EU-NMS-10 countries, by 0.2 per cent. This result supports efficiency seeking considerations, that foreign investors are likely to locate their investments in countries with high potentials of efficient human resources and a well-educated labour force. Generally, other explanatory variables, considered in the static panel model are showing the same effect and significance level on FDI stocks between countries, in the dynamic - panel model.

The fact that some of the significant explanatory variables, reported in the static panel models become insignificant in the *GMM* specification, with exception to lagged dependent variable, suggest that some of the explanatory power of the lagged dependent variable is being falsely attributed to the other variables in static specification. Therefore, the empirical findings of the model imply that there exist some omitted dynamics in the static panel models, thus confirming that the empirical findings related to determinants of FDI in transition economies, using static panel models, should be accepted with caution.

7 CONCLUSIONS

This paper has identified significant determinants of FDI stock into the SEE-5 transition economies and EU-NMS-10 Countries, and highlighted the implications of different institutional factors for FDI. Using an augmented gravity model, we focused the research mainly on the importance of institutional and transition-related factors as crucial determinants that largely explain the size of FDI into transition economies. As expected, all of these determinants play an important role in determining firms' foreign market entry decision. Moreover, SEE-5 and EU-NMS-10 host country institutional-related factors appeared to significantly determine bilateral FDI stock from the EU-14 countries. Guided by the economic theory and empirical investigation, we specify static and dynamic models. From all the estimates we found that gravity factors, like market size of the host and source country, are an important determinant for foreign investors. Negative and significant coefficient of distance indicates that FDI is determined by gravity factors, as expected.

Based on a cross-section panel data analysis we have found that FDI stocks are significantly determined by both gravity factors (distance, GDP) and non-gravity factors (openness,

schooling, transition progress, the corruption perception index and interaction terms between governance indicators with bilateral FDI). The positive and significant coefficients of market size factors (GDP) for both source and host country indicates that FDI is determined by host and source country market seeking considerations. Also, the positive and significant coefficients of schooling, is a signal that foreign investors are considering efficiency - seeking considerations for positive FDI decisions. The interaction terms of institutional related variables (corruption perception index, regulatory quality and political risk), with SEE dummy, have been proved as significant.

The economic importance of the findings of this paper is on providing an analytical basis for the evaluation of state policies and institutions aimed at making SEE Countries and New EU member states more attractive to foreign investors. In line with this finding, the paper provides support on which most important macroeconomic and institutional determinants of FDI a strong emphasis should be placed by policymakers in these countries.

In terms of contribution to the empirical evidence, the study has augmented the gravity model to accounts for many host country transition and institutional related factors that consider investment climate in SEE-5 and EU-NMS-10 countries. For this purpose, several political and institutional related variables were included in the model, such as WTO membership, bilateral FDI agreement, corruption perception index, control of corruption, regulatory quality, government effectiveness, political risk, voice and accountability and institutional transition progress. These factors have also been considered by the European Commission as the most important detriment for EU accession.

The limitations of this study are pertaining to the data set, the estimation techniques and the variables used. The sample size used in this study is limited to the number of 24 investing partners, on the information provided by the OECD. Although the data set includes more than 70% of the total FDI stock into SEE-5 originated from 14 European Union investing partner countries, some important investing partners such as EU-NMS- 10 countries (Bulgaria, Slovenia, the Slovak Republic, the Czech Republic, Poland, Hungary, Estonia, Latvia, Lithuania) for SEE-5 countries, are excluded from the sample of source countries of FDI, and these countries are considered as host countries of FDI for the EU-14 countries. A different study where EU-NMS-10 countries, would also be considered as a source countries of FDI, for SEE-5 countries, among other EU-14 countries, would improve the research results of the study, as concern to the determinants of FDI in SEE-5 countries. In addition, among EU-14 countries, only 11 of them are part of European Monetary Union (EMU), like: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal and Spain, whereas other countries like: Denmark, Sweden, the United Kingdom use their own national currency. This may lead to biased estimates of the impact of regional integration on the inward stock of FDI. This study offers a methodology to make progress headed for disentangling the effects of diverse institutions. However, future empirical research might usefully try to investigate a larger and perhaps a new diverse data set than our 29 countries.

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APPENDIX

Table 4: *Description of variables used in the model and data sources*

Variable name	Measurement unit	Source
$lnfdi_{ijt}$	FDI outward stock of Source Country: FDI stock from source country to host country at current year	OECD
$lngdp_{i,t}$	GDP in source country	UNCTAD
$lngdp_{j,t}$	GDP in host country	UNCTAD
$ln difgdpc_{ijt}$	Difference in GDP per capita between source country and host country, in PPP (constant 2005 international\$), in logarithm	UNCTAD
$ln d_{ij}$	Distance in kilometers between capital cities of host and source countries, in logarithm	www.geobytes.com
$smctry$	Dummy variables that take value one when two countries share a border, a language or were the same country in the past, correspondingly and zero, otherwise	CEPII
$lnop_{j,t}$	Openness: (Export + Imports)/GDP, in logarithm	UNCTAD, own calculation
$lbex_{jit-1}$	Bilateral exports from country j to country i . In millions of US dollar	OECD
wto_{jt}	World Trade Organization membership of host country. Dummy variable = 1 at the time of host country accession into WTO at year t , 0 otherwise	UNCTAD
$bfdia_{ij}$	Bilateral Investment agreement. Dummy variable = 1, denoting the year of entry into force of bilateral investment agreement, at the time afterward, 0 otherwise	UNCTAD
$lnsch_{jt}$	School enrollment, tertiary (% gross), in logarithm	World Bank
$Ltransjt$	Log of transition progress. the sum of seven EBRD transition specific indexes, i.e. the indexes denoting large scale privatization, enterprise restructuring, competition policy, banking reforms and interest rates liberalization, securities markets and non-bank financial institutions, and infrastructure reform	EBRD
$Lcpijt$	Log of corruption perception index, range 0 - 10	Transparency International
$lncc_{jt}$	Control of corruption in host country, in per centile rank, in logarithm	World Bank. WGI
$lnrq_{jt}$	Regulatory Quality in host country, in per centile rank, in logarithm	World Bank. WGI
$Lgovjt$	Government effectiveness, in per centile rank, in logarithm	World Bank. WGI
$lnrl_{jt}$	Rule of law in host country, in per centile rank, in logarithm	World Bank. WGI
$Lpsjt$	Political risk, in per centile rank, in logarithm	World Bank. WGI
$lnva_{jt}$	Voice and accountability in host country, in per centile rank, in logarithm	World Bank. WGI
$seed$	Dummy variable = 1 for SEE countries capturing bilateral relationship between SEE host countries and EU-14 source countries, 0 otherwise (capturing bilateral relationship between NMS - EU - 10 host countries and EU-14 source countries.	Own knowledge

Table 5: *Descriptive statistics of the variables used in the model*

Variables	Obs	Mean	Std.Dev	Min	Max
Log of FDI	1793	5.217049	2.6398	-4.71053	11.56833
Log of FDI stock (transformed variable)	3570	2.691952	3.15899	0	11.56834
Log of GDP in source country (-1)	3569	13.0338	1.052331	10.93089	15.103
Log of GDP in host country (-1)	3569	10.09527	1.213576	7.57492	13.17948
Log of difference in GDP per capita (-1)	3570	10.01834	2.709805	4.156837	28.46393
Log of distance	3570	7.158972	.5868352	4.007333	8.105609
Language, border and cultural similarities	3570	.0285714	.166622	0	1
WTO membership	3570	.6784314	.4671438	0	1
Bilateral FDI agreement	3570	.6705882	.4700655	0	1
Log of openness	3430	1.01906	.3198304	.3003606	1.735325
Log of bilateral exports	3570	4.280308	2.611247	0	10.68594
Log of schooling	3556	3.663512	.4530056	2.327495	4.49518
Log of transition progress	3332	2.586845	.2439516	1.386294	2.813011
Log of Consumer Price Index	3570	1.33237	.2986206	.6931472	1.902107
Log of Control of corruption	3570	3.904717	.487955	1.921217	4.463944
Log of Regulatory Quality	3570	4.122033	.3715025	2.870569	4.520331
Log of Government Effectiveness	3570	3.969506	.5066156	1.921217	4.44208
Log of Political Risk	3570	3.91958	.5305904	1.347074	4.488583
Log of Voice and Accountability	3570	4.119053	.3312094	2.486508	4.493379
Log of Rule of Law	3570	3.910839	.4933368	2.207275	4.461333
Log of Corruption Perception index*d	3570	.3511553	.5094607	0	1.481605
Log of Control of Corruption *d	3570	1.150178	1.655953	0	4.149694
Log of Regulatory Quality *d	3570	1.238456	1.763355	0	4.250525
Log of Government Effectiveness *d	3570	1.161196	1.674215	0	4.267726
Log of Political Risk *SEE dummy	3570	1.113829	1.603425	0	4.216156
Log of Voice and Accountability *d	3570	1.255482	1.786692	0	4.230477
Log of Rule of Law*d	3570	1.238456	.1.763355	0	4.250525

THE ROLE OF PROCESS PERFORMANCE MEASUREMENT IN BPM ADOPTION OUTCOMES IN CROATIA

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Received: 9 December 2014

Accepted: 19 March 2015

ABSTRACT: *The state-of-the-art literature finds that business process management projects very often fail to fulfil the measurement requirements. The reason lies in the fact that companies understand the need to identify and define process measures, but do not implement the measurement practices. The objective of this paper is to examine the role of process performance measurement in BPM adoption outcomes. To achieve that, the literature in this field is reviewed and the results of an empirical study conducted in Croatian companies are analyzed and discussed. The results of statistical analysis support the proposed theoretical background. In practical terms, this survey identifies process performance metrics and performance linkages as the key factors that need to be in place for a company to effectively adopt BPM.*

Keywords: *business process management, process measurement, business process management system, performance measurement system, croatian companies.*

JEL Classification: M15, M21

1. INTRODUCTION

Business process management (BPM) is a set of methods, techniques, and tools that can support the design, performance, management, and analysis of operational business processes (van der Aalst, ter Hofstede and Weske, 2003). According to Harmon (2007), BPM is “a management discipline focused on improving corporate performance by managing a company’s business processes”. Many companies have decided to initiate BPM projects to improve their business, though the adoption of BPM can be a daunting task. A major reason for the failure of BPM is the focus on implementation rather than the adoption of this concept. These terms may appear interchangeable; however, their outcomes are very different. BPM implementation is the introduction of BPM concepts (e.g. process owners, process modelling) or systems in the organization, while BPM adoption is the acceptance of those concepts in the organization. This adoption can lead (but does not necessarily in each case!) to business benefits. The adoption of BPM is not a single act, but a process

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that occurs over time. Once BPM is implemented in a company, additional efforts must be made to follow this concept and to reap the benefits of its implementation. Experience from business practice suggests that implementation happens as soon as a BPM project is successfully completed, though successful adoption happens when the organization accepts BPM concepts in its' everyday practice (e.g. strategic commitment to BPM is cascaded down through the organization; employees respect process owners and share process knowledge, BPM is institutionalized into the business practice via policies and standards). BPM adoption can enable an organization to achieve improved efficiency and quality and, ultimately, a positive return on investment in BPM. Reaching the ultimate goal "increased efficiency" has proven to be challenging in many ways. This challenge includes defining key performance indicators (KPIs), which align process performance with business objectives and strategy. An effective means of organizational performance evaluation is based on the systematic measurement of business process performance and is known as Process Performance Measurement (PPM).

To achieve this goal, companies are investing substantial resources (both human and financial) into deploying process performance measurement practices. Many companies have developed a wide variety of KPIs that they review periodically, while others have very complex and sophisticated business process management systems (BPMS) that allow them to track KPI achievements in real time. BPMSs are software platforms that support the definition, execution, and tracking of business processes. BPMS enables the design, analysis, optimization, automation and diagnosis of business processes by separating process logic from the applications that run them, managing relationships among process participants, integrating internal and external process resources, and monitoring process performance.

On the other hand, the deployment of PPM and BPMS is not a panacea. Ravesteyn and Batenburg (2010) surveyed the critical success factors of BPMS implementation in Dutch organizations. The findings underpinned the authors' perspective that BPMS implementation is not primarily an IT project. The information technology (IT) dimension must be supported by other BPM dimensions (e.g. management, organizational structure and culture). In order to overcome the risk of failure, a BPM project must be linked with an organizational strategy and achieving this lies in the development of reliable and effective PMS (Minonne and Turner, 2012). Wong, Tseng and Tan (2014) argued that managerial BPM capabilities based on the commitment of managers and employees have a positive impact on technical BPM capabilities, which in turn facilitates an organization's ability to increase its performance. In order to establish business process performance measurement, process management experts are needed and business process roles should be defined. Furthermore, business process monitoring and measurement bring the strengths of modern technologies and management disciplines together – both technical and business expertise is needed. Trkman (2010) pointed out that BPM should translate a company's strategy into specific requirements and enable the execution of the strategy.

The objective of this paper was to investigate the role of PPM in BPM adoption outcomes in Croatian companies. *A literature review was performed* to examine the definition of

performance measurement and its linkages to BPM, as well as the definition, benefits and obstacles of BPM adoption. In order to show trends in the BPM maturity level and PPM implementation, studies on BPM implementation in Croatian companies during the past decade were reviewed. *An empirical study in the form of a survey on BPM adoption was conducted* among Croatian companies to assess if PPM leads to better BPM adoption outcomes. The findings are presented, summarized and discussed. Finally, the requirements for further research are identified, together with the limitations of this survey.

2. PROCESS PERFORMANCE AND PROCESS MEASUREMENT: A BACKGROUND

Performance management comprises activities that ensure organizational goals are consistently met in an effective and efficient manner (Bosilj Vukšić, Pejić Bach and Popović 2013). Different performance measurement models, methods and systems have been outlined in numerous studies, showing that the issue of performance measurement is a topical and complex one (Neely, 2005; Taticchi, Tonelli and Caganazzo, 2010).

2.1. About performance measurement

One of the most used models for performance measurement is a balanced scorecard - a comprehensive set of performance measures defined from four different measurement perspectives: financial, customer, internal processes and learning and growth (Kaplan and Norton, 1996). According to Neely, Adams and Kennerley (2002), a performance measurement and management system is a balanced and dynamic system that enables support of the decision-making process by gathering, elaborating and analyzing information. It uses different measures and perspectives in order to give a holistic view of the organization. As key authors of this area, Neely, Gregory and Platts (2005) define the performance measurement system (PMS) as a set of metrics used to quantify efficiency and effectiveness. Kueng (2000) defines a PMS as an information system that: (1) gathers relevant performance data through a set of indicators; (2) compares the current values against historical or planned values, and (3) disseminates the results to process actors and managers.

Many companies have developed a wide range of performance indicators that they review periodically, while some have very complex and sophisticated PMSs that allow them to track activity in real time. Bourne et al. (2000) emphasized that the uncertainties associated with identifying, defining (quantifying, valuing) and implementing measures, metrics and indicators were a major barrier in the implementation of PMS. Measures are designed, tested and agreed upon for use, but there is no consensus or standards as to their nature or design. It is impossible to define a generic set of measures that should be included in any PMS (Franco-Santos et al., 2007).

Choong (2013a) defined a conceptual framework relating to the use of accounting (financial) and non-accounting (non-financial) data, and suggested several non-accounting

methods of performance measurement that could be used generally in various organizations. A consideration for this holistic view is to provide a PMS that is balanced between financial and non-financial perspectives. Zeglat et al. (2012) found that although the literature shows significant changes and movements towards using balanced (integrated) systems, work is required in terms of developing more dynamic PMSs that consider significant stakeholders who contribute to achieving a better competitive advantage and success for an organization. Finally, according to Franco-Santos et al. (2007), the lack of an agreement on the definition of PMS creates confusion, and limits the potential for generalization and standardization of the key characteristics of PMS. These authors believe that greater clarity on what a PMS comprises could improve the understanding and comparability of the research conducted in this field, and could also accelerate the implementation of PMSs in business practice.

Kueng, Meier and Wettstein (2001) stated that PMSs are still not focused on business processes. Although only comprehensive management of business process performance can make a major contribution to business success, most companies still experiment with the specification of process-based performance measures (Harmon, 2007; Hammer and Champy 1993), and they rarely align their measures with their strategic goals. Furthermore, the literature in BPM implementation is short on rigorous empirical evidence as to the performance impacts of this concept. There is still not a clear understanding of whether BPM projects have a noticeable effect on the performance of organizations.

2.2. A process perspective of performance measurement

PPM entails capturing qualitative and quantitative information about the processes (vom Brocke and Rosemann, 2010). Therefore PPM can be considered a subset of performance measurement. PPM allows managers to measure the performance of business processes, individual activities and resources in the processes. The empirical findings of Kohlbacher and Reijers (2013) revealed that process performance management is significantly and positively associated with organizational performance. Dumas et al. (2013) identified four dimensions of process performance: time, cost, quality and flexibility. The introduction of process information that takes multiple dimensions into account helps to overcome shortcomings of traditional performance measures (Fürstenau, 2008). According to Dumas et al. (2013), each of these process performance dimensions can be refined into a number of process performance measures (or KPIs).

PPM makes it possible to perform comparisons (benchmarking) with competing companies. This is regarded by many authors as very important dimension of business excellence. Since the launch of the international ISO 9000:2000 family of standards in 2000, PPM has been a topic of interest (Nenadal, 2008). Moreover, PPM is an obligatory requirement of the ISO 9001 standard. PPM includes three stages: first, the measures and performance areas have to be aligned with the overall organization balanced scorecard framework; second, the specific process metrics and parameters must be identified and classified, and finally, a real time measurement must be performed using the selected parameters (Margherita, 2014).

However, there are still a number of issues relating to PPM adoption. Based on the literature review (Kueng, 2000; Kueng, Meier and Wettstein, 2001; Neely, 2005; Kohlbacher, 2010), Milanović Glavan (2012) introduced a conceptual model for the creation of a process performance measurement system (PPMS). According to these authors, PPMS should be conceptualized as a modular, separate information system (IS) which is loosely integrated to other ISs throughout the organization. It should be focused on processes, not on organizational units and it should evaluate performance by measuring both quantitative and qualitative aspects. Performance indicators must also be process specific and must be derived from the process goals.

In the paper “Understanding Process Performance Measurement Systems” (2011), Milanović Glavan answered the research question: “What is the current state of research on PPM?” She presented the results of a systematic analysis on: (1) BPM, business processes, business process orientation (BPO); (2) performance measures/indicators, business performance measurement, PMS and (3) PPMS in different journal databases and online libraries. The analysis showed that the search items (1) and (2) were well known and widely used in the literature, while there was the lack of PPMS research in the literature. The results of the literature review called for further survey on this topic in order to examine the state of PPM in Croatian companies.

2.3. THE LINK BETWEEN PERFORMANCE MEASUREMENT AND BPM

Many researchers have indicated the need for an integration of concepts and tools from process management, human resource management and workflow management in order to measure organizational performance (Glykas, 2011). Some authors argued the requirement for holistic performance measurement approaches and the need for linkages between performance measurement and BPM (Škerlavaj et al., 2007; Jeston and Nelis, 2009; Glykas, 2011). There is also a lack of metrics and measures that would link strategic performance indicators with employee performance indicators (Bititci, Carrie and McDevitt, 1997; Glykas, 2011). Thus Glykas (2011) proposed a holistic performance measurement methodology and a performance measurement tool that integrates three types of management tool categories: process management tools (business models, cycle time, time and cost analysis), human resource management tools (job descriptions, performance measures) and workflow management tools (events, transactions, business rules).

On the other side, Choong (2013b) identified several gaps of current PMS in meeting the measurement requirements of BPM, such as: PMS is focused on functional or workflow aspects rather than on business processes; performance measurement is still largely focused on financial measures; the goals of PMS are usually not clearly defined and explained, and measured information is not communicated properly. This author proposed an Integrated Business Process Management and Measurement System, which encompasses a management system combined with a measurement system and business processes to ensure that business processes performance within organizations can be measured using the best of IT and IS.

BPMSs should provide managers with an in-depth understanding of how a process is performing, while also identifying areas for improvement. Therefore PPM could be considered a very important functionality of every BPMS.

3. BPM ADOPTION

Over the past two decades, definitions of BPM have ranged from IT-focused views to BPM as a holistic concept (Rosemann and de Bruin, 2005; Willaert et al. 2007; Siriram, 2012). Siriram (2012) proposed an integrated “soft” and “hard” approach to BPM, where a “soft” approach is related to the human activity dimension, and a “hard” approach is concerned with the use of IT to improve business processes. Since most business problems have both the technical and human activity dimension, a hybrid (holistic) BPM approach gives the best solution (Crawford and Pollack, 2004; Shaw et al., 2007). This section aims to investigate BPMS as an IT perspective of BPM initiatives. Since recent research identified a series of obstacles associated with BPM adoption these aspects were also explored.

3.1. Definition of BPM adoption

Up until now, there have been different researches focusing on BPM adoption. For the purpose of this paper, several definitions and statements are used to explain the term “BPM adoption”. Reijers et al. (2010) defined BPM adoption as the use and deployment of BPM concepts in organizations. Once BPMS is implemented and the BPM project is completed with the allocated resources (on time and on budget), there remains the need to adopt this concept in the organization. To have a truly successful adoption of BPM, organizations must define specific process roles and responsibilities and address ownership and control of process across organizational units (Bandara et al., 2007). Because of its scope BPM adoption is recognized as a complex process that requires effort, time, resources and discipline, and it is likely to trigger widespread organizational changes (Hribar and Mendling, 2014). According to vom Brocke and Rosemann (2010), BPM adoption passes multiple stages, such as: (1) awareness and understanding of BPM; (2) intention and desire to adopt BPM; (3) ensuring BPM project governance; (4) transition from BPM projects into a BPM programme and (5) a cost-effective setup of all BPM-related activities.

To date, some researchers have investigated the partial aspects of BPM adoption. Organizational culture can be considered one of the most important factors in BPM adoption (Hribar and Mendling, 2014). A survey conducted in organizations with more than 50 employees in Slovenia revealed that the highest level of BPM adoption success was achieved in organizations with a Clan culture type, while organizations with the lowest level of BPM adoption success appear to have a Hierarchy culture. Kohlbacher and Gruenwald (2011) conducted a survey on a sample of Austrian manufacturing companies to test the joint effect of PPM and process ownership on company performance. The empirical evidence indicated that organizations must implement both concepts: PPM and the process owner role to obtain the benefits of BPM. The authors stated that every metric must

have an individual who is personally responsible for achieving the planned target levels. Malinova and Mendling (2013) derived a conceptual framework showing the insights of BPM adoption by organizations. They classified the outcomes of BPM adoption into three categories: (1) understanding of processes; (2) performance of processes and (3) control of processes. The interviews showed that the most important outcomes of BPM adoption in the “performance of processes” category were: process standardization and optimization, elimination of process weaknesses, clear customer solution approach and efficient utilization of resources.

Furthermore, BPM practice should be aligned and integrated with corporate governance and management systems (Doebeli et al., 2011). Jesus et al. (2009) noted that multiple BPM initiatives with different purposes are often conducted in an isolated way within an organization, leading to a limited use of synergies and a diminished return on BPM investment. To avoid such situations, organizations need to create governance mechanisms that can drive BPM actions in a disciplined manner. BPM governance sets the principles for relevant and transparent accountability, decision making and a reward system, but with a focus on processes. De Bruin (2009) identified governance as one of the key factors for an organization to effectively adopt BPM. Process metrics and performance linkages were addressed as a very important part of BPM governance.

3.2. BPMS: the IT perspective of BPM adoption

According to Shaw et al. (2007), IT used to improve and manage organizations’ internal and external processes is called BPMS. Ravesteyn and Versendaal (2007) defined BPMS as software applications that enable the modelling, execution, monitoring and user representation of business processes and rules. They stressed that BPMSs are based on the integration of existing and new information systems that are orchestrated via services. IT support is needed in process modelling and analysis, and in process execution (vom Brocke and Rosemann, 2010).

Nowadays, many software applications to support BPM are available on the market. The importance of integrated performance measurement indicators in BPMS has been identified by academics and practitioners (Glykas, 2011). Therefore, BPMS product vendors incorporate data warehouse and analytical capabilities to provide more sophisticated business activity monitoring and business intelligence capabilities. Properly implemented, BPMS can impact a company’s performance through increased revenue, cost reduction, cycle-time improvement, increased customer satisfaction or improvements in any other metric considered important to creating value. Real-time process measurement systems motivate employees and management to improve their efforts, as it enables them to monitor, control and manage a process while performing it (Becker and Glascoff, 2014). From the perspective of IT, Janiesch, Matzner and Muller (2012) claimed that many BPMSs lack sophisticated capabilities to analyze log data, while process mining functionalities are limited to rather passive monitoring and reporting. The authors proposed the development of BPMS that facilitates a round trip from insight to action.

Ruopeng, Shazia and Governatori (2009) discussed two strong but often conflicting forces impacting BPMS adoption. One of fundamental aspects of BPMS is to provide control and coordination of business activities, though there is also a requirement for ensuring that the control does not negatively affect operational flexibility. Business practice shows that once deployed, business processes hardly ever remain unchanged over time. Thus, BPMS should be flexible in order to support a dynamic change of business processes and to ensure BPM governance and adoption within an organization. The problem of BPMS governance is similar to the maintenance problem in software development. Even the greatest experts in BPM face difficulties in redesigning processes and process measures without access to the knowledge that shaped previous BPMS design and development decisions (Ramesh et al., 2005). Thus, the requirements for BPMS to be capable of managing contextual knowledge are identified.

Some of the conclusions based on the literature review pertain to the adoption of BPMS and PPM that are beyond the scope of IT (Nenadal, 2008; Minonne and Turner, 2012; Kueng, 2000):

- BPMS and PPM goals, objectives and values must be shared as widely as possible among employees. Personal involvement is vital for BPMS and PPM adoption.
- Communication must be improved to ensure that process measures are clearly linked to strategies and easily understood by employees. Otherwise, a lack of understanding leads to poor BPM adoption.
- Measurement culture, social transformation and a changed attitude toward openness can be significant.
- The results of PPM must be accepted by users – all those being measured and all those using the measurement data should be able to explain any KPI.
- The KPIs must reflect all important aspect of process performance.
- Stakeholders (e.g. process owners, process managers) must have access to performance data when needed.
- A sufficient measurement frequency must be obtained in order to give a comprehensive and accurate overview of performance.

4. BPM, PMS AND PPMS IN CROATIA

Based on the above arguments that PPM is becoming highly important in companies, the objective of this paper was to determine the current status of utilization of BPM and BPMS for performance management in Croatian companies. Over the past decade, some research has been carried out in Croatian companies to investigate their BPM maturity level and to detect trends in PPM implementation.

In 2006, Škrinjar, Hernaus and Indihar Štemberger indicated that there was a lack of empirical research on BPM implementation outcomes. With that in mind, and based on the original study of McCormack and Johnson (2001), a group of researchers from the Faculty of Economics, University of Ljubljana, Slovenia and Faculty of Economics and Business, University of Zagreb, Croatia conducted a cooperative empirical study among Slovenian and Croatian companies with more than 50 employees. The survey showed that process

data quality was not very important in Croatia, that jobs were more often multidimensional rather than just plain tasks and that the process terminology was not been widely used in Croatia. Overall, the study indicated that Croatian companies achieved a somewhat lower maturity level at that time in comparison with Slovenian companies (Škrinjar, Hernaus and Indihar Štemberger, 2006). Also, Škrinjar, Hernaus and Indihar Štemberger (2006) emphasized that Croatian companies should put more effort into defining and measuring process performance, setting specific process performance objectives, and monitoring process data quality.

Škrinjar, Bosilj Vukšić and Indihar Štemberger (2008) presented an empirical study that confirmed the impact of BPO on organizational performance. They set three hypotheses in the study: (1) “the higher level of BPO a company achieves the better it performs financially”, (2) “the higher the level of BPO a company achieves, the better it performs non-financially in terms of more satisfied employees, customers and suppliers” and (3) “better non-financial performance leads to better financial performance”. Using extensive statistical analysis, Škrinjar, Bosilj Vukšić and Indihar Štemberger (2008) were unable to support the first but accepted the second and the third hypotheses. These authors presented a strong direct impact of BPO on the non-financial performance of the company. Although no direct impact was found between BPO and financial performance, the authors showed that BPO still strongly impacts the financial performance of the company through its impact on non-financial performance.

One year later, in 2009, a Croatian empirical study on BPM maturity was included in a global investigation of key turning points in business process maturity where, with the use of a decision tree, it was shown that the key factor of the turning point for Croatia was in process management and measurement dimension, and in the fact that employees had to undergo continual training in order to adapt to the process changes. The decision tree method also showed that employee roles had to be multidimensional and that process culture needed to be developed if companies wanted to move forward to business process maturity level 3. However, the authors stressed a limitation of the decision tree method in the case of Croatia, saying that more records should be used to determine rules for classification at the highest and lowest levels of BPO (McCormack et al., 2009).

An extension of the 2008 study (Škrinjar, Bosilj Vukšić and Indihar Štemberger, 2008) was conducted in 2012 by Hernaus, Pejić Bach and Bosilj Vukšić in order to examine how a strategic approach to BPM impacts organizational performance and PPM, using empirical data collected from Croatian companies. The authors set four hypotheses: (1) a strategic approach to BPM positively influences PPM implementation, (2) PPM practice positively influences non-financial performance, (3) PPM practice positively influences financial performance, and (4) PPM practice has an indirect positive influence on financial performance through non-financial performance. The collected data was analyzed using statistical methods such as validity analysis, reliability analysis, descriptive data analysis and non-parametric correlation analysis, as well as the structural equations model fit. The results confirmed three of the four hypotheses, and rejected the hypothesis that process performance measurement practice positively influences financial performance. The authors emphasized that PPM is a requirement for a modern, process-oriented organization and that managers should not focus solely on financial data (Hernaus, Pejić Bach and Bosilj Vukšić, 2012).

Two years later, a study aimed at assessing the current state of BPM maturity was conducted on large, small and medium sized Croatian companies (Milanović Glavan, 2014). The study showed that: (1) Croatian companies are between the defined and linked levels of business process maturity, i.e. in a comparison with a previous study from 2008, it was found that there were no statistically significant differences between the state of BPO in Croatian companies now and then; (2) IT has a positive impact on BPO; and (3) BPO has a positive impact on organizational performance, especially the nonfinancial performance. This study also detected the key turning points for Croatian companies.

The literature review on PPM and BPM in Croatia in the last decade also included a case study on a business process oriented project carried out in 2007 by a Croatian governmental organization. The Croatian project dealt with certain issues, including limited human resources, the readiness to settle for minor outcomes resulting in outdated solutions, the fact that BPO project dynamics were not adjusted to the launch of four other government projects, and that the process management office, process positions and roles failed to be established once a project was completed. Although employees of the Croatian governmental organization were highly motivated to participate in the project, their top management decided to implement only slight proposed changes, resulting in minor positive results of the project (Bosilj Vukšić, Hauc and Kovačić, 2010).

Bosilj Vukšić, Pejić Bach and Tomičić-Pupek (2014) presented a case study on a simulation modelling approach for reengineering collaboration in higher education. This study outlined the significance of pondering KPIs and confirmed that process performance management is a valuable method in higher education institutions.

5. EMPIRICAL STUDY

In order to facilitate organizations in obtaining the benefits of BPM, one essential approach is to identify the drivers and enablers for BPM adoption. While some of the previous studies pointed out the relevance of process performance measures for BPM adoption success, there have been no studies to date that have investigated the relationship of PPM on BPM adoption success. Consequently, this paper aims to address *the following research question*: Does process performance measurement lead to better BPM adoption outcomes? Providing an answer to this research question should represent the contribution of this study. An empirical study was carried out from October 2013 to May 2014, and its main goal was to assess the current state of BPM adoption in Croatian companies.

5.1. About the survey

The research instrument was developed in cooperation with researchers from the Faculty of Economics – University of Ljubljana and the Vienna University of Economics and Business. The survey (see Appendix) was structured to cover a holistic nature of the BPM concept (exploring four different perspectives on BPM): “Process Orientation” (15 questions),

“Organizational Culture” (24 questions), “Process Performance Index” (10 questions) and “BPM Initiative”, e.g. BPM project or program (31 questions). For each of these perspectives, several dimensions were defined, and each consisted of several items (statements to be evaluated by respondents).

The survey was adopted from the BPO framework used during previous studies (McCormack et al., 2009; Škrinjar, Bosilj Vukšić and Indihar Štemberger, 2008; Škrinjar, Bosilj Vukšić and Indihar Štemberger, 2011; Hernaus, Pejić Bach and Bosilj Vukšić, 2012) and the Process Performance index (PPI) developed by the Rummler-Brache Group (2004). Usually, a BPO construct is treated as a multidimensional measure. Kohlbacher and Gruenwald (2011) found that documentation of business processes, management commitment, the process owner role, and process performance measurement are the most often mentioned dimensions of the BPO constructs. The focus of this paper is on PPM as one of the key dimensions of the BPO construct according to Hammer (2007). The BPM initiative is considered an organizational project/programme that aims to enhance the efficiency and effectiveness of business processes. The survey also comprised basic questions about the individual respondents’ knowledge of BPM (7 questions) and about the characteristics of the company (3 questions) (see Appendix). In addition to numerous factors that play an important role in BPM adoption, this study only measured the role of PPM, while the remaining factors were not considered.

The survey was distributed to top managers in order to ensure a strategic perspective of the company in question. The assumption was that top managers have adequate knowledge of BPM and performance measurement within their companies. If top managers were not familiar with the progress of BPM in their company, they were instructed to pass the survey to a competent person within the organization. The practices identified were used in the survey in the form of statements to which respondents stated the extent of their agreement with the statement (on a 5-point Likert scale). With every question, respondents were given the ability to respond with “cannot judge” in order to prevent a random response due to a lack of knowledge on that topic. For some questions, it was possible to answer with “yes” or “no”, or to give an explanation. The “Organizational Culture” part of the survey was structured differently, though these questions are beyond the scope of this paper. Participation in this survey was both voluntary and confidential for all respondents.

5.2. Data analysis

The data gathered from the national sample was analyzed using descriptive statistics and inferential statistics. For the purpose of the statistical analysis in this paper, only the dimensions “Process management and measurement” and “Outcomes of BPM adoption” were processed, as this paper focuses on the role of PPM in BPM adoption outcomes and this statistical analysis is sufficient to answer the stated research question. Within the “Process management and measurement” dimension of BPO perspective, respondents were asked to evaluate the level of PPM practice in a company. This dimension consisted of five statements: (1) Process performance is measured in the organization; (2) Process

measurements are defined; (3) Resources are allocated based on process; (4) Specific process performance goals are in place, and (5) Process outcomes are measured. The BPM initiative perspective consisted of six dimensions: (1) Interest in BPM, (2) Organizational structure, (3) Experience with BPM, (4) Reasons for BPM adoption, (5) BPM adoption and (6) Outcomes of BPM adoption. Aligned with the research question, the views of respondents were measured with respect to a variety of BPM adoption outcomes, such as: process efficiency, agility and quality improvement, increasing external quality (client satisfaction), throughput, decreasing waiting time, and reducing costs (see Appendix).

Surveys were sent to top managers in 417 Croatian companies, by post and web. A total of 110 Croatian top managers responded, giving a final response rate of 26.4%. The frequencies of companies in regard to their industry are given in Table 1.

Table 1: *The examined companies regarding their industry type*

	Industry type:	Frequency
A	Agriculture, hunting, forestry	3
B	Mining and quarrying	6
C	Manufacturing	3
D	Electricity, gas, steam and air conditioning supply	6
E	Water supply, sewerage, waste management and remediation activities	3
F	Construction	7
G	Wholesale and retail trade	14
H	Transportation and storage	7
I	Accommodation and food service activities	6
J	Information and communication	15
K	Financial and insurance activities	14
L	Real estate activities	6
M	Professional, scientific and technical activities	5
N	Administrative and support service activities	1
O	Public administration and defence; compulsory social security	1
P	Education	1
Q	Human health and social activities	1
R	Arts, entertainment and recreation	1
S	Other service activities	0
T	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	0
U	Activities of extraterritorial organizations and bodies	0
	Not given	10

Company size was determined by the number of employees and its annual revenues. The distribution of companies in the sample is shown in Figures 1 and 2.

Figure 1. Frequency of companies by number of employees

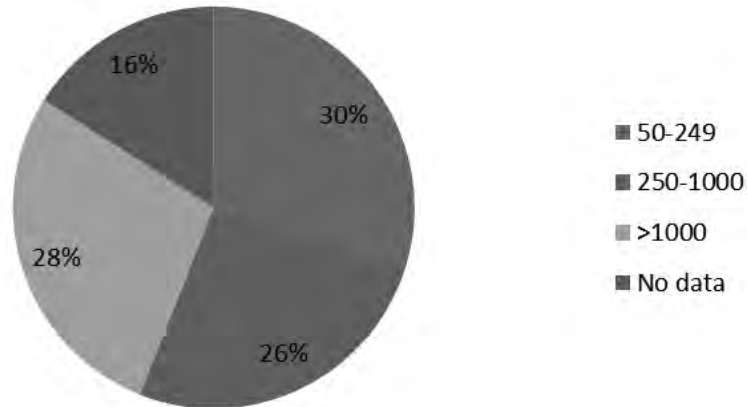
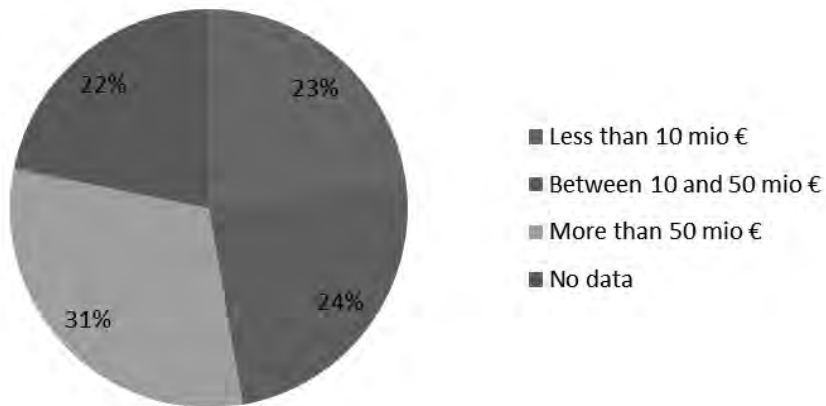


Figure 2. Frequency of companies by annual revenues



The data gathered from the Croatian national sample was analyzed using descriptive and inferential statistic, e.g. correlation analysis and the independent t-test. The goal was to determine if there is a relationship between the dimensions "Process management and measurement" and "Outcomes of BPM adoption". The analysis results are shown below.

Correlation analysis between these two dimensions was first conducted (Table 2). The correlation coefficient for the examined dimensions was 0.65, with the 1% statistical significance of the correlation. The coefficient indicates that there is a moderate positive relationship between the dimensions "Process management and measurement" and "Outcomes of BPM adoption". In other words, these two dimensions (variables) tend to increase or decrease together.

Table 2: *Correlation matrix between "Process management and measurement" and "Outcomes of BPM adoption"*

	<i>PMM</i>	<i>O_BMP_A</i>
<i>PMM</i>	1.000	
<i>O_BMP_A</i>	0.649	1.000

Secondly, the independent t-test was carried out. The t-test compares the means between two unrelated groups for the same continuous, dependent variable. The goal was to determine whether the dimension "Outcomes of BPM adoption" differs based on "Process management and measurement". The dimension "Process management and measurement" was represented with two statements (questions): Process performance is measured in the organization, and Process measurements are defined.

The independent t-test between "Outcomes of BPM adoption" and the statement Process performance is measured (as a representative of Process management and measurement domain) showed that the dimension "Outcomes of BPM adoption" differed based on the measurement of process performance (Table 3). In other words, it can be concluded with a significance value of 1% that companies that do not measure their process performance have an inferior outcome of BPM adoption than those companies that do. Companies that do not measure their process performance are those that graded the statement Process performance is measured with grades of 1 or 2 on the 5-point Likert scale, while companies that measure process performance include those that graded the statement Process performance is measured with a grade of 3, 4 or 5 on the 5-point Likert scale.

Table 3: *Independent t-test between "Outcomes of BPM" and statement Process performance is measured*

Not measured	Measured	
2.7804	3.8196	mean
0.9677	0.5879	std. dev.
15	59	n

The independent t-test between "Outcomes of BPM adoption" and the statement Process measurements are defined (as a representative of Process management and measurement dimension) showed that the domain "Outcomes of BPM adoption" differed based on the definition of process measurements (Table 4). It can be concluded, with a significance value 1%, that companies that do not define their process measures have an inferior outcome of BPM adoption than those companies that do.

Table 4: *Independent t-test between "Outcomes of BPM" and statement Process measurements are defined*

Not defined	Defined	
2.9474	3.8063	mean
1.0417	0.5833	std. dev.
17	57	n

According to the above results, an answer can be provided to the main research question of this study: process performance measurement leads to better BPM adoption outcomes. This means that the results of this study supported the suggested theoretical background.

5.3. Implications and limitations of the empirical study

The findings presented in this paper have two major implications for research. While previous studies indicated the relevance of process performance measures for BPM adoption success, few studies conducted a quantitative examination of the relationship of process performance measurement on BPM adoption success. For the purpose of this paper, preliminary statistical analysis was conducted. First, we investigated if process performance measurement leads to better BPM adoption outcomes. The results of the correlation matrix showed that the dimension "Outcomes of BPM adoption" differed based on Process management and measurement. Therefore, these findings indicate an important research gap, as they showed that process management and measurement was positively associated with the success of BPM initiatives and the resulting outcomes of BPM adoption. Second, the t-test showed that BPM adoption outcomes within companies that did not define process performance measures and did not measure process performance were significantly lower than within the group of companies that practiced process performance measurement. Therefore, this study found that companies that define their process measurements and measure their process performance had better outcomes of BPM adoption than companies that did not. This is a contribution to this important topic in BPM, namely the importance of measuring the performance of business processes.

Also, these findings have major implications for practice by providing a better understanding of the relationship between process management and measurement and BPM adoption outcomes. In practical terms, this survey identified process performance metrics and performance linkages as the key factors that need to be in place for a company to effectively adopt BPM. That fact can help organizations prepare their BPM initiative by including a definition of process measures in the preparatory phase of their BPM adoption. Since process performance measures have a significant role in the success of BPM adoption, organizations should be aware of their PPMS and its characteristics. This could serve as a guideline for a company when choosing an approach towards BPM adoption.

However, this study on the role of PPM had several limitations. As previously mentioned, certain other factors might also play a role in BPM adoption outcomes. These factors

were not addressed in this study and this is one of the limitations. Additionally, further empirical research is needed to investigate which specific measures are likely to support BPM adoption success. Since this survey was limited to respondents from Croatian companies, a future study could be carried out in other countries to explore if process performance measurement and BPMS adoption differ across regions and cultures. A further way to improve the reliability of the results would be to increase the sample size of the survey or to specifically validate a relationship of process performance measurement and BPM adoption results through comparative case studies. Also, the research question was approached with a survey design. This means that the conclusions of the study are subject to the general weaknesses of correlation studies. Still, correlations were found to be in line with the hypotheses. The interpretation of the potential direction of this connection builds on the theoretical arguments and on anecdotal evidence from the BPM literature, where positive effects of using process performance measures on BPM adoption outcomes have been reported.

Despite the boundaries set by these limitations, the findings of this survey offer a contribution to the discussion on the role of PPM in BPM adoption outcomes in research and practice. Moreover, we believe that the empirical results presented in this paper could provide a solid basis for further research in the fields it addresses.

6. CONCLUSIONS

This paper presents a review of the current literature on BPM adoption and the role of PPM therein. Outcomes of BPM projects frequently fail to accomplish the BPM measurement requirements. This is because companies do not implement measurement practices, although they do understand the need to identify and define process measures. Defining measurement criteria without implementing practical measurement techniques contributes to the misgiving of BPM.

The literature review also showed the increase of the company understanding of the process performance measures and their relevance for the successful BPM adoption. Although certain studies have investigated and showed BPM trends and PPM usage in Croatian companies, no studies have studied the relationship between PPM and BPM adoption.

The main objective of this paper was to investigate if process performance measurement leads to better BPM adoption outcomes based on the empirical study conducted among Croatian companies. Using extensive statistical analysis, the collected data was analyzed and it was concluded that BPM adoption was more successful within those companies that define their process measures and apply process performance measurement. Given that process performance measures have an important role in successful BPM adoption; companies should understand the value of PPM and be aware of its characteristics.

Nevertheless, one should not ignore the fact that process performance measurement is only one of the factors that influence BPM adoption and that there might also be other important factors that are yet to be examined.

Finally, we can conclude that this study extends the body of knowledge regarding the definition and the use of process measures in BPM and thereby paves the path to more successful BPM adoption – which will significantly increase the benefits of BPM within organizations.

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APPENDIX

Business Process Management - BPM is a management discipline focused on improving corporate performance by managing a company's business processes. BPM is a modern business approach, which emphasizes the effectiveness and efficiency of operations based on customer orientation, innovation, flexibility, and eliminating unnecessary activities and congestions within the business processes of the organization.

INDIVIDUAL CHARACTERISTICS	
* A business process management initiative is an organizational project/program that aims to enhance the efficiency and effectiveness of business processes, e.g. business process reengineering, lean management, total quality management, operational excellence programs, six sigma, etc.	
Knowledge of business process management (BPM)	
Which statement best describes your knowledge of business process management (BPM)?	<input type="checkbox"/> No notion of BPM. <input type="checkbox"/> Only theoretical knowledge, e.g. by following training or reading a BPM book. <input type="checkbox"/> Only practical knowledge, e.g. hands-on experience by participating in a BPM initiative*. <input type="checkbox"/> Both theoretical and practical knowledge.
How do you assess your knowledge of BPM?	<input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Bad <input type="checkbox"/> No knowledge of BPM
Experience with BPM	
Have you ever actively participated in a BPM initiative?	<input type="checkbox"/> Yes, I participated in _____ [e.g. process modeling, process renovation]. <input type="checkbox"/> No.
Your experience with BPM is mainly shaped through a role as:	<input type="checkbox"/> Process analyst <input type="checkbox"/> Systems engineer <input type="checkbox"/> Process participant <input type="checkbox"/> Process owner <input type="checkbox"/> Process manager <input type="checkbox"/> Senior management <input type="checkbox"/> I have no experience with BPM
Role and expertise	
How would you rate the following statements regarding your role and expertise in your organization?	1 = IT-oriented 5 = business-oriented
My current role is organizationally positioned mostly as...	1 2 3 4 5
With regards to BPM, I consider myself as having expertise that is mostly...	1 2 3 4 5

PROCESS ORIENTATION	
Indicate to what extent you agree / disagree with the following statements regarding process orientation in your organization.	1 = completely disagree 5 = completely agree X = cannot judge
Process view	
The average employee views the business as a series of linked processes.	1 2 3 4 5 X
Process terms such as <i>input</i> , <i>output</i> , <i>process</i> , and <i>process owners</i> are used in conversation in the organization.	1 2 3 4 5 X
Processes within the organization are defined and documented using inputs and outputs to and from our customers.	1 2 3 4 5 X
The business processes are sufficiently defined so that most people in the organization know how they work.	1 2 3 4 5 X
Indicate to what extent you agree / disagree with the following statements regarding process orientation in your organization.	1 = completely disagree 5 = completely agree X = cannot judge
Process jobs	
Jobs are usually multidimensional and not just simple tasks.	1 2 3 4 5 X
Jobs include frequent problem solving.	1 2 3 4 5 X
People are constantly learning new things on the job.	1 2 3 4 5 X
Our organization appoints process owners for all business processes.	1 2 3 4 5 X
Process owners of our organization have the authority to make decisions on business processes.	1 2 3 4 5 X
Process owners of our organization are accountable for the performance of business processes.	1 2 3 4 5 X
Process management and measurement systems	
Process performance is measured in the organization.	1 2 3 4 5 X
Process measurements are defined.	1 2 3 4 5 X
Resources are allocated based on process.	1 2 3 4 5 X
Specific process performance goals are in place.	1 2 3 4 5 X
Process outcomes are measured.	1 2 3 4 5 X

ORGANIZATIONAL CULTURE	
This part consists of six questions (I-VI). Each question has four alternatives. Divide 100 points among these four alternatives depending on the extent to which each alternative is similar to your own organization. Give a higher number of points to the alternative that is most similar to your organization. Be sure your total equals 100 points for each question.	
I	Dominant Characteristics
The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.	
The organization is a very dynamic entrepreneurial place. People are willing to stick their necks out and take risks.	
The organization is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	
The organization is a very controlled and structured place. Formal procedures generally govern what people do.	

II	Organizational Leadership	
	The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.	
	The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.	
	The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	
	The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.	
III	Management of Employees	
	The management style in the organization is characterized by teamwork, consensus, and participation.	
	The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.	
	The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.	
	The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.	
	This part consists of six questions (I-VI). Each question has four alternatives. Divide 100 points among these four alternatives depending on the extent to which each alternative is similar to your own organization. Give a higher number of points to the alternative that is most similar to your organization. Be sure your total equals 100 points for each question.	
IV	Organization Glue	
	The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.	
	The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.	
	The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.	
	The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.	
V	Strategic Emphases	
	The organization emphasizes human development. High trust, openness, and participation persist.	
	The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	
	The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	
	The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.	
VI	Criteria of Success	
	The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.	
	The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	
	The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.	
	The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.	

PROCESS PERFORMANCE INDEX	
Indicate to what extent you agree / disagree with the following statements.	1 = completely disagree 5 = completely agree
Alignment with strategy	
Business processes are directly linked to the organization's strategy and critical success factors.	1 2 3 4 5
Holistic approach	
Enterprise business processes are defined before launching improvement initiatives (e.g., Six Sigma).	1 2 3 4 5
Process awareness by management and employees	
Key players understand the role of process management in improving performance.	1 2 3 4 5
Portfolio of process management initiatives	
Improvement efforts are prioritized according to process "health" and linkage to current issues.	1 2 3 4 5
Process improvement methodology	
Process management teams use a standard approach to navigate process analysis and design.	1 2 3 4 5
Indicate to what extent you agree / disagree with the following statements.	1 = completely disagree 5 = completely agree
Process metrics	
Process performance is measured at the individual, process, and enterprise levels.	1 2 3 4 5
Customer focus	
Process analysis and design efforts focus on delivering value to the customer.	1 2 3 4 5
Process management	
Process owners monitor process metrics and continuous improvement efforts on a regular basis.	1 2 3 4 5
Information systems	
Process is the "master" and the information systems are the "servants".	1 2 3 4 5
Change management	
People and cultural issues are effectively addressed when process changes are introduced.	1 2 3 4 5

BPM INITIATIVE	
<i>A business process management initiative is an organizational project/program that aims to enhance the efficiency and effectiveness of business processes, e.g. business process reengineering, lean management, total quality management, operational excellence programs, six sigma, etc.</i>	
Interest in BPM	
Which statement best describes the current interest in BPM within the organization?	<input type="checkbox"/> Key strategic commitment by top management <input type="checkbox"/> An important initiative at the level of several business processes <input type="checkbox"/> Initial initiative limited to certain small processes <input type="checkbox"/> We are exploring the options <input type="checkbox"/> We are not interested
Organizational structure	
Do you have a special group (department/unit) or individual within the organization that is responsible for management of business processes? If yes, how is it organized?	<input type="checkbox"/> There is no formal group / individual responsible for BPM <input type="checkbox"/> BPM Group is organized at the level of top management <input type="checkbox"/> We have a special department / division for BPM <input type="checkbox"/> BPM Group is organized within the IS department <input type="checkbox"/> BPM Group is organized within the HR department <input type="checkbox"/> BPM Group is organized within the quality control department <input type="checkbox"/> Elsewhere, please specify: _____

Experience with BPM	
Has your organization ever conducted a BPM initiative?	<input type="checkbox"/> Yes. <input type="checkbox"/> No.
If YES, please specify (multiple answers possible).	<input type="checkbox"/> BPM initiative was conducted in some parts of the organization. <input type="checkbox"/> BPM initiative was conducted in the entire organization. <input type="checkbox"/> BPM initiative has covered all processes. <input type="checkbox"/> BPM initiative has covered some processes. <input type="checkbox"/> BPM initiative was conducted once. <input type="checkbox"/> BPM initiative was conducted repeatedly. <input type="checkbox"/> BPM initiative is being carried out continuously. <input type="checkbox"/> Our longest BPM initiative lasted over a period of several weeks. <input type="checkbox"/> Our longest BPM initiative lasted over a period of several months. <input type="checkbox"/> Our longest BPM initiative lasted over a period of several years.
Reasons for BPM adoption	
What were the reasons for conducting the BPM initiative in your organization?	
Which specific objective(s) you wanted to accomplish with BPM in your organization?	
BPM adoption	
Who initiated the BPM initiative in your organization?	<input type="checkbox"/> Members of the Board /owners <input type="checkbox"/> Top management <input type="checkbox"/> Informatics <input type="checkbox"/> Other (please specify): _____
How did you approach BPM initiative in your organization?	<input type="checkbox"/> Top-down <input type="checkbox"/> Bottom-up
Did your organization have the help of external consultants for conducting the BPM initiative?	<input type="checkbox"/> No. <input type="checkbox"/> Yes.
Did you anticipate any problems before you started with the BPM initiative in your organization?	<input type="checkbox"/> No. <input type="checkbox"/> Yes, we anticipated the following problems (please specify): _____ _____ _____
If the previous answer was YES, what did you do to avoid the anticipated problems?	
Which were the most important success factors for conducting the BPM initiative in your organization?	

Outcomes of BPM adoption	
Indicate to what extent you agree / disagree with the following statements.	1 = completely disagree 5 = completely agree X = cannot judge
BPM adoption in our organization was successful.	1 2 3 4 5 X
Our objectives of BPM adoption were reached.	1 2 3 4 5 X
BPM contributes to the execution of the organization's strategy.	1 2 3 4 5 X
BPM plays a role in our daily work practices.	1 2 3 4 5 X
Since we adopted BPM in our organization the process efficiency improved	1 2 3 4 5 X
Since we adopted BPM in our organization the process quality improved.	1 2 3 4 5 X
Since we adopted BPM in our organization the process agility improved.	1 2 3 4 5 X
Since we adopted BPM in our organization client satisfaction increased.	1 2 3 4 5 X
Since we adopted BPM in our organization quality of the products / services increased.	1 2 3 4 5 X
Since we adopted BPM in our organization the time spent on service provision process decreased.	1 2 3 4 5 X
Since we adopted BPM in our organization the time spent on other main processes decreased.	1 2 3 4 5 X
Since we adopted BPM in our organization the time spent on planning, goal establishing decreased.	1 2 3 4 5 X
Since we adopted BPM in our organization the time spent on analysis, corrective actions decreased.	1 2 3 4 5 X
Indicate to what extent you agree / disagree with the following statements.	1 = completely disagree 5 = completely agree X = cannot judge
Since we adopted BPM in our organization the reactive time to the internal changes decreased.	1 2 3 4 5 X
Since we adopted BPM in our organization the reactive time to the external changes decreased.	1 2 3 4 5 X
Since we adopted BPM in our organization the costs spent on service provision process decreased.	1 2 3 4 5 X
Since we adopted BPM in our organization the costs spent on other main processes decreased.	1 2 3 4 5 X
Since we adopted BPM in our organization the costs spent on planning, goal establishing decreased.	1 2 3 4 5 X
Since we adopted BPM in our organization the costs spent on analysis, corrective actions decreased.	1 2 3 4 5 X

CHARACTERISTICS OF THE ORGANIZATION	
Organizational size	
How many employees are working for your organization?	<input type="checkbox"/> less than 50 <input type="checkbox"/> 50-249 <input type="checkbox"/> 250-1000 <input type="checkbox"/> more than 1000
What was your organization's approx. sales revenue (turnover) in 2012?	<input type="checkbox"/> up to and including 10 million € <input type="checkbox"/> more than 10 million and up to and including 50 million € <input type="checkbox"/> more than 50 million €

Business sector (Industry type)	
What is the organization's statistical classification of economic activities (i.e. industry the organization operates in)?	<input type="checkbox"/> A: Agriculture, forestry and fishing <input type="checkbox"/> B: Mining and quarrying <input type="checkbox"/> C: Manufacturing <input type="checkbox"/> D: Electricity, gas, steam and air conditioning supply <input type="checkbox"/> E: Water supply, sewerage, waste management and remediation activities <input type="checkbox"/> F: Construction <input type="checkbox"/> G: Wholesale and retail trade; repair of motor vehicles and motorcycles <input type="checkbox"/> H: Transportation and storage <input type="checkbox"/> I: Accommodation and food service activities <input type="checkbox"/> J: Information and communication <input type="checkbox"/> K: Financial and insurance activities <input type="checkbox"/> L: Real estate activities <input type="checkbox"/> M: Professional, scientific and technical activities <input type="checkbox"/> N: Administrative and support service activities <input type="checkbox"/> O: Public administration and defense; compulsory social security <input type="checkbox"/> P: Education <input type="checkbox"/> Q: Human health and social work activities <input type="checkbox"/> R: Arts, entertainment and recreation <input type="checkbox"/> S: Other service activities <input type="checkbox"/> T: Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use <input type="checkbox"/> U: Activities of extraterritorial organizations and bodies

Thank you for your participation in the survey.

E / B / R

**POVZETKI V
SLOVENSKEM JEZIKU**

IMPACT OF NEGATIVE QUALITY INCONSISTENCY ON BRAND LOYALTY – CASE OF CROATIAN FOOD MARKET

VPLIV NEGATIVNE KAKOVOSTNE NEKONSISTENCE NA ZVESTOBO ZNAMKI – PRIMER HRVAŠKEGA PREHRANSKEGA TRGA

MARTINA FERENČIĆ, ANA WÖFLING

POVZETEK: *Privabljanje in ohranjanje lojalnosti potrošnikov hitro razvijajočim se segmentom potrošnih dobrin je postala glavna skrb vseh proizvodnih podjetij in prav tako tudi v trgovini na drobno. Mnogi trženjski raziskovalci trdijo, da je zaznava kakovosti izdelka ali storitve eden ključnih elementov v procesu krepitev zvestobe blagovni znamki. Ko govorimo o prehranskem trgu, se je treba zavedati, da ima uživanje hrane neposreden vpliv na zdravje ljudi in je v tem kontekstu proces izgradnje lojalnosti blagovnim znamkam za znamke živil nemogoč ali pa je težak, če kakovost znamke živil ni na pričakovani ravni in v skladu z opredeljenimi standardi kakovosti hrane. Cilj članka je boljše razumevanje vidike povezav med kakovostjo prehranskih izdelkov in procesa zvestobe blagovni znamki in raziskati kako lahko težave z negativnimi kakovostnimi nekonsistentnostmi v različnih kategorijah živil vplivajo na zvestobo blagovni znamki. Empirična raziskava (internetna raziskava) je bila izvedena z namenom dokazati in pojasniti povezavo med kakovostjo prehranskih izdelkov in zvestobe znamki živil. Rezultati raziskave kažejo, da so glavni razlogi za to, da je zvestoba določeni blagovni znamki živila ali izdelka povezana predvsem s pozitivno izkušnjo blagovne znamke, visoko in stabilno kakovostjo izdelkov in prepoznaven okus. V kontekstu rezultatov raziskave je mogoče sklepati, da dolgoročno zadovoljstvo potrošnikov kot dejavnik v procesu zvestobe blagovne znamke živil je odvisna od stabilne kakovosti izdelkov, zato morajo biti prehranski proizvajalci ali lastniki blagovnih znamk živil osredotočeni na preprečevanje ali zmanjševanje negativnega kakovostnega aspekta. Zaradi omejitve raziskave samo na hrvaške potrošnike, razširitev raziskave na širši trg bi dalo jasnejši pogled na povezavo kakovosti prehranskih izdelkov in procesa zvestobe blagovne znamke.*

Ključne besede: *prehranska industrija, kakovost prehranskih izdelkov, zvestoba blagovni znamki živil, lojalnost*

INTANGIBLE CAPITAL, INNOVATION AND EXPORT-LED GROWTH: EMPIRICAL COMPARATIVE STUDY OF SLOVENIA AND THE WESTERN BALKANS

NEOPREDMETENA SREDSTVA, INOVACIJE IN VODILO RASTI IZVOZA: EMPIRIČNA PRIMERJALNA ŠTUDIJA SLOVENIJE IN ZAHODNEGA BALKANA

MARIJA DRENKOVSKA, TJAŠA REDEK

POVZETEK: Zaradi stalno napredujoče globalizacije in liberalizacije trgov so inovacije najmanjša zahteva kot potreben pogoj za podjetja in države, da so konkurenčni na svetovni ravni in znanje je ključni vložek. V primerjalni študiji smo raziskali intelektualni kapital na vzorcu podjetij z Zahodnega Balkana in Slovenije in analizirati povezavo med intelektualnim kapitalom, inovativnostjo in obsegom izvoza. Z uporabo edinstvenega podatkovnega niza raziskave za te države, predlagamo strukturni model za preučitev naše hipoteze. Rezultati kažejo, da intelektualni kapital ne zadošča za globalno konkurenčnost podjetij, in da višja prisotnost na svetovnih trgih lahko ponudi izpostavljenost bolj naprednega znanja, ki ga podjetja ne morejo pridobiti na domačih trgih.

Ključne besede: neopredmetena sredstva, inovacije, vodilo rasti izvoza, Slovenija, Zahodni Balkan

USER-DRIVEN INNOVATION: AN EXPLORATORY STUDY

K UPORABNIKU USMERJENE INOVACIJE: RAZISKOVALNA ŠTUDIJA

BLANKA TACER, MITJA RUZZIER

POVZETEK: Kljub relativno velikemu spodbujanju k uporabniku usmerjenih inovacij v praksi, ostajajo raziskave o teh inovacijah še vedno v začetnih fazah. Po prvotni analizi teorije so v članku opisani izsledki raziskovalne študije področja. Opravljenih je bilo devet intervjujev s katerimi je dobljena empirična osnova za oblikovanje kategorij, povezanih z obstoječimi konceptualnimi vprašanji. Rezultati kažejo tri ključne elemente k uporabniku usmerjenih inovacij (sodelovanje uporabnikov, ki iščejo povratne informacije in usmeritev k designu). Rezultati kažejo tudi interdisciplinarno povezavo takšnih inovacij z blagovne znamke, oblikovanjem, in interakcijo med podjetjem in uporabnikom, kot komplementarnimi področji pri ustvarjanju uporabniške izkušnje. Analiza pripelje do štirih teoretičnih

predlogov za prihodnje študije. V zaključku obravnava članek omejitve in posledice za prihodnje raziskave.

Ključne besede: *k uporabniku usmerjene inovacije, oblikovanje vrednosti, design, blagovne znamke, interakcija podjetje-uporabnik*

DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN SOUTH EAST EUROPEAN COUNTRIES AND NEW MEMBER STATES OF EUROPEAN UNION COUNTRIES

DETERMINANTE TUJIH NEPOSREDNIH NALOŽB V DRŽAVE JUGOVZHODNE EVROPE IN NOVIH ČLANICAH EVROPSKE UNIJE

BARDHYL DAUTI

POVZETEK: *Prispevek predstavlja glavne determinante neposrednih tujih naložb v petih državah Jugovzhodne Evrope in desetih novih državah članic EU z uporabo dokazljivega Gravity modela. Študija upošteva račun držav specifičnih institucionalnih dejavnikov, ki vplivajo na odločitve tujih investitorjev iz 14 ključnih držav članic Evropske unije, da vlagajo v 5 držav JVE in 10 novih EU držav. Iz rezultatov študije smo ugotovili, da se pojavijo gravitacijski dejavniki in institucionalne povezave kot so nadzor korupcije, kakovost predpisov, politično tveganje, indeks korupcijske zaznave, članstva v WTO in napredek tranzicije se bistveno odraža vhodne neposredne tuje investicije iz osrednjih držav članic EU, da bi sprejel ekonomije Jugovzhodne evropske regije in nove države članice Evropske unije.*

Ključne besede: *neposredne tuje investicije, Jugovzhodna Evropa, panelna ekonometrija, Gravity Model*

THE ROLE OF PROCESS PERFORMANCE MEASUREMENT IN BPM ADOPTION OUTCOMES IN CROATIA

VLOGA PROCESA MERJENJA USPEŠNOSTI UPRAVLJANJA POSLOVNIH PROCESOV SPREJETIH NA HRVAŠKEM

VESNA BOSILJ VUKŠIĆ, LJUBICA MILANOVIĆ GLAVAN, DALIA SUŠA

POVZETEK: *Temeljna literatura ugotavlja, da projekti upravljanja poslovnih procesov zelo pogosto ne izpolnjujejo zahtev za merjenje. Razlog je v tem, da podjetja razumejo*

potrebo po določitvi in definiranju procesnih meritev, vendar ne vpeljejo prakse merjenja. Namen članka je preučiti vlogo merjenja uspešnosti procesov v rezultatih posvojitve upravljanja poslovnih procesov. Za doseglo namena je bila preučena literatura s področja in analizirani rezultati empirične študije, izvedene v hrvaških podjetij. Rezultati statistične analize podpirajo predlagano teoretično ozadje. Raziskava v praktičnem smislu opredeljuje procesne meritve uspešnosti in učinkovitosti povezav kot ključnih dejavnikov, ki morajo biti na voljo podjetju, da učinkovito sprejme upravljanje poslovnih procesov.

Ključne besede: *upravljanje poslovnih procesov, merjenje procesov, sistem za upravljanje poslovnih procesov, sistemov za merjenje uspešnosti, Hrvaška*
