New Ideas in a Changing World of Business Managament and Marketing

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Preface

This volume has been prepared by the Doctoral School in Economics at the Faculty of Economics and Business Administration at the University of Szeged on the occasion of the 3rd Central European PhD Workshop on Economics and Business Studies, with the title "New Ideas in a Changing World of Business management and Marketing". The volume provides a review of selected papers presented at the PhD Workshop.

The Doctoral School in Economics at the University of Szeged aims at organizing a series of PhD workshops for Central-European doctoral schools. The workshop offers specific training and provides opportunity for interaction amongst senior and young researchers in line with the research activity of the doctoral schools on the field of regional economics and economic geography.

The first part of the volume is dealing with behavioral marketing and management of interactions. It consists of five articles highlighting the role of customer loyalty, the characteristics of sercice elimination, the effects of proximity in trading, the dynamics of networks and even barriers of patenting. The second part puts social and environmental issues into the focus on the field of marketing and management. Six articles provide insight on the one hand to company support for employee volunteering, appearance of children in consumer society, event marketing, on the other hand to the concept of de-growth and environmental regulations. The six articles of the third part are focusing on financial management and management challenges, and disscuss the tools of portfolio management, the management of monetary policy, the operational risks of local goverments, the conceptual framework of financial reporting, the role of strategy making in case of SMEs and the role of Supreme Audit Institutions.

We are grateful to Tibor Mandják, Maciej Mitrega, Balázs Hámori giving plenary sessions and chairing the session of the PhD workshop, to the reviewers, Gábor Dávid Kiss, György Málovics, Benedek Nagy, Anita Pelle, Szabolcs Prónay, Balázs Révész, Izabella Szakálné Kanó, Beáta Vajda, Zsófia Vas for their contribution to the realization of the volume.

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Editors

PART ONE

Behavioral Marketing and Management of Interactions

Hetesi E. – Vas Zs. (eds) 2015: *New Ideas in a Changing World of Business Management and Marketing*. University of Szeged, Doctoral School in Economics, Szeged, pp. 11-23.

1. Defining and Interpreting Loyalty in the Case of Music Festivals

Klára Kazár

Loyal customers have key importance for scientific and business sector as well. For companies, customer retention can maintain high profitability, and for customers, being loyal can reduce searching costs and risks as well. However, there are numerous descriptions for loyalty; therefore examining the phenomenon can be difficult due to the variety of definitions.

The aim of this paper is to define loyalty in a case of a special service: in a case of music festivals. Answering this question, a literature overview will be introduced about the approaches and definitions of loyalty, and music festival loyalty models will be described.

Keywords: loyalty, music festivals, loyal customers

1. Introduction

Loyal customer base takes a crucial part in achieving long term success for companies (Curran – Healy 2014, Hetesi 2007, Reiccheld 2003). Furthermore, loyalty has a key importance for customers as well. Searching costs and risks of a new choice can be reduced by repeated purchases. Customers can establish a connection with the brand through loyalty; moreover, loyalty can contribute to evolve self-concept or reach an ideal self-concept (Prónay 2011).

However, it can be said that loyalty is an important phenomenon but accompanied by several questions. How can loyalty be interpreted generally? Or how can loyalty be described in the case of a given product or service? The question of this paper is how loyalty can be defined and interpreted in case of a special service: in the case of a music festival. Finding an answer for this question, this study gives a literature overview about the phenomenon, about the development and about the occurrence of loyalty in the case of music festivals. Interpreting loyalty in the case of music festival, first, it is necessary to define loyalty at a broader context. The general definition and approaches can be followed by the introduction of loyalty definitions of music festival literatures. Finally, an assessment framework and definition can be described in the case of music festivals

2. Definitions of loyalty

One of the most important papers concerning the phenomenon of loyalty is Hirschmann's Exit, Voice, Loyalty from 1970. His study focuses is not only on loyalty, but the possible consequences of quality-deterioration occur in his paper as well. These consequences could be exit, voice and loyalty. Exit means leaving the given company or the given brand. In the case of voice, customers have not left the company or brand yet; however, they express their voice against quality-deterioration hoping a possible positive change in quality. Loyalty reflects to the stay besides quality-deterioration but without expressing voice. According to Hirschmann (1995), those are loyal customers who insist on a company or on a brand against quality-deterioration. In this interpretation, loyalty seems to be irrational, because customers are loyal to a company or to a brand which do not deserve their commitment. The author (Hirschmann 1995) also highlights that loyal customers should not be considered as losers; their commitment can increase the chances for a possible quality improvement. Loyal customers can be losers if there is not any improvement against their insistence.

Hirschmann (1995) describes the definition of loyalty aptly; however, this definition shows the customer in the case of quality-deterioration, which is an extreme situation. It can be questionable, how customers behave in the case of companies which offer continuous, high quality. It also can be interesting, whether it is possible to apply a unified definition for loyalty. Based on the more decades long literature of loyalty, a standard definition is cannot be found. The definitions of loyalty can be grouped into three main approaches: behavioral, attitudinal and a complex approach can be distinguished (Touzani – Temessek 2009, Prónay 2011).

2.1 Behavioral loyalty

Loyalty can be identified as repurchase from the point of view of behavioral approach (Bandyopadhyay – Martell 2007, Touzani – Temessek 2009, Prónay 2011). McConnell (1968) describes loyalty tightly and simply, according to which „brand loyalty or brand preference has most frequently been defined as the consumer's repeat purchase probability of a particular brand, varying between 0 and 1" (McConnell 1968, 14. p.). Mentioning different examples, Tucker (1964) catches the phenomenon by a sequence of repurchases and Tellis (1988) identifies loyalty as a repurchasing intention measured by the relative frequencies of

repurchases from a brand during a given period. Besides the definitions mentioned above, (repurchasing rate, probability of repurchasing, sequence of repurchases) a brand's repurchasing ratio in a product group can also be applied for measuring loyalty (Touzani – Temessek 2009).

One of the advantages of behavioral approach is measurability; definitions can be easily operationalized, which makes measuring the definition of loyalty easier. However, some disadvantages of the approach can be mentioned. The behavioral approach is not able to explore influencing factors behind loyalty and it cannot be applied for forecasting repurchasing intentions (Touzani – Temessek 2007, Prónay 2011). Furthermore, it is not sure that the lack of a repurchase or a low repurchasing rate occurs due to the lack of loyalty; any other factors can play role in the emergence of a low repurchasing rate. Bandyopadhyay and Martell (2007) mention situational factors (stock-out or non-availability), intrinsic factors (individual fortitude) and socio-cultural factors (social bonding) among the other loyalty influencing elements. Dick and Basu (1994) also highlighted that a high repurchasing rate can reflect situational factors: the repurchasing rate can increase due to a stock decreasing sale; or a low repurchasing rate can occur because of the lack of brand preference or because of variability seeking intentions as well. Furthermore, the authors (Dick – Basu 1994) emphasize that behavioral definitions are not suitable for explaining the development and transformation of the loyalty concept. Based on the behavioral approach, the definition of loyalty is simple and easily measurable but it is not able to describe motivations explaining the phenomenon: the attitudinal approach can be applied for that.

2.2. Attitudinal loyalty

The essence of the attitudinal approach, how loyal customers feel and think. The basis of attitudinal loyalty research is that loyalty is not parallel to repurchase, it is more, including emotional elements as well (Prónay 2011). In the frame of attitudinal approach, Jacoby and Kyner (1973) pointed out the drawbacks of behavioral approach and they created a complex definition of loyalty. They draw up six conditions, according to which „brand loyalty is (1) the biased (i.e., nonrandom), (2) behavioral response (i.e., purchase), (3) expressed over time, (4) by some decision-making unit, (5) with respect to one or more alternative brands out of a set of such brands, and (6) is a function of psychological (decision-making, evaluative) processes" (Jacoby – Kyner 1973, 2. p.). The sixth condition has a key importance; according to Jacoby and Kyner (1973), psychological processes behind loyalty are more complex than a

simple „I like the brand" statement. As a result of decision making and evaluation processes, the customer develop a kind of commitment towards the brand. In fact, this can be considered as loyalty. The authors (Jacoby – Kyner 1973) deem that the concept of commitment enables understanding the difference between loyalty and the different forms of repurchase.

Dick and Basu (1994) think also that it is not enough focusing on repurchase, the concept of loyalty should be broadened by emotional elements. The relative attitude connected to a brand or to a product has a key importance in their model. According to the authors (Dick – Basu 1994), attitudes are relative because they cannot be identified in an isolated way, attitudes can be interpreted in a given consumption situation. The essence of their theory, that loyal customers have positive beliefs and emotions towards a given brand.

However, the attitudinal approach has limitations as well. Touzani and Temessek (2009) point out that the attitudinal approach do not consider all of the influencing factors behind loyalty. Comparing to the behavioral approach, the only difference is that the indicator of loyalty is the strength of attitudes instead of behavior. Bandyopadhyay and Martell (2007) emphasize that the attitudinal approach's effort is to understand loyalty better; however, the meaning and the operationalization of loyalty cannot be understood entirely in the frame of the approach. Based on the statements above, it cannot be stated that application of behavioral or attitudinal approach could be more suitable. Both of the approaches have advantages and disadvantages as well, and a complex approach can be described, which is combining the elements of behavioral and attitudinal approach as well.

2.3. The complex approach of loyalty

The complex (or composite) approach interpret loyalty in multiple levels combining the elements of behavioral and attitudinal approach. Touzani and Temesek (2009) show that the essence of complex approach is that loyalty includes positive attitudes toward the brand (appearing through commitment) and repurchase of the brand as well. Several interpretation and definition have created in the frame of complex approach, furthermore, the relation among the levels or elements of loyalty are not unified too.

Bloemer and Kasper (1995) make a difference between true loyalty and spurious loyalty, based on the definition Jacoby and Kyner (1973). In the case of true loyalty, repurchase is a result of psychological processes, thus the basis is commitment; while in the case of spurious loyalty, and repurchase is a manifestation of inertia. True loyalty has attitudinal and behavioral component too: a true brand loyal customer is committed toward

the brand. The customer insists on the brand due to this commitment and the customer also feels a necessity for repurchasing the given brand. According to the authors (Bloemer – Kasper 1995), commitment is not enough, a committed customer can be considered as a true loyal customer if he or she repurchases the brand.

Zeithaml et al. (1996) focus on service quality in their study, but some behavioral intentions appear as consequences of quality. One of these intentions is loyalty, but besides that, brand-switch, pay more, external response (complaining to other customers) and internal response (complaining to the employees of the company) dimensions can be mentioned. The authors (Zeithaml et al. 1996) mention that loyalty can occur in several different ways; brand preference, recommendation of the brand and positive word-of-mouth about the brand appear also in their loyalty concept. In their study (Zeithaml et al. 1996), loyalty, as an attitudinal element, is a part of a complex behavioral answer for the consequences of quality.

Pritchard et al. (1999) examine behavioral and attitudinal loyalty too. Their paper focuses on commitment and its reasons; they interpret loyalty as an outcome of commitment. According to the authors (Pritchard et al. 1999), commitment is a strong emotional bond, which consists of such an elements like relationship with a brand or with a company, or identification with a brand or with a company. Loyalty can be measured by loyal attitudes and by repurchasing rate in this study.

One of the most widespread complex approaches was written by Oliver (1999), who distinguished different levels of loyalty:

- The first level is cognitive loyalty, according to which the consumer knows that the given brand or product is better than the rival ones. This knowledge manifests itself in the available information about the product mentioning price or different features of the product. This level has the weakest intensity.
- The second level is affective or emotional loyalty, where preferences toward the brand occur. Consumers buy because they like the brand. In this level, satisfaction with the brand play an important role, however, there is a possibility for brand switching, which also highlights the contradictory relationship between loyalty and satisfaction (Oliver 1999). Commitment can be interpreted by identification with emotions and liking, however, a deeper commitment would be necessary due to the risk of brand switching.
- The third level is conative loyalty, where customers have an intention for buying of which basis is a positive feeling towards the brand. In the case of conative loyalty, there is commitment but its cause is motivation: consumers want to repurchase but it is not realized always.

- The fourth level is action loyalty. In this level, repurchasing intention is coupled by action. Consumers do not only intend to buy, but they are ready to handle obstacles occurring against purchase.

However, Oliver (1999) defines a higher level above the previous described ones: that is ultimate loyalty of which basis is a deeply held commitment. In the case of ultimate loyalty, consumers are willing to purchase the product at any kind of prices and under any circumstances; moreover, they are ready for making sacrifices for the purchase too.

Besides the role of commitment, Oliver (1999) highlights the role of environment. Up to the level of individual commitment and up to the social support for loyalty, different situations can be described. If individual commitment and social support are low, the basis of loyalty is only product superiority. If individual commitment is weak but social support is high, individuals are passive acceptors of the environment – having a fear of the negative consequences of refusing loyalty. If individual commitment is strong but social support is low, that is the case of determined self-identity. Oliver (1999) compares this case to brand-love or brand-adoration, thus the basis of commitment is a personal, internal motivation. If individual commitment and social support are strong, we can mention the case of strong loyalty. The individual brand-adoration and brand commitment are enhanced by the society. The consumer identifies with a community of which the brand is a part. It is important to mention that in the cases of high social support, we can talk about consumption communities, brand communities; differences in high social support cases can be found in the level of individual commitment. First and last, Oliver's (1999) loyalty approach is based on cognitive and affective elements and ends in behavioral elements. The ultimate loyalty, built in a deeply held commitment, stands above all of the loyalty components. However, societal support is necessary for establishing ultimate loyalty.

Besides Oliver's (1999) study, it is worth mentioning other interpretations in the frame of the complex approach of loyalty. According to Aksoy (2013), a special relationship is necessary for the existence of loyalty. This relationship can be interpreted as a bond, furthermore, there is a need for action to defend and enhance the relationship. Curran and Healy (2014) examine different phases of loyalty, based on the studies of Dick and Basu (1994) and Oliver (1999), lower-, intermediate- and high loyalty can be differentiated. Wang et al. (2014) described consumer loyalty related to a firm, where they applied the definition of Zeithaml et al. (1996). In their study (Wang et al. 2014), loyalty to a firm is influenced by the

loyalty to a salesperson through several dimensions such as affect transfer, social transfer, identification with the firm and behavioral component.

Among Hungarian literature, several studies can be mentioned in the frame of complex loyalty approach. Hetesi and Rekettye (2005) deal with behavioral and affective elements as well: they measure loyalty with the help of repurchase, brand-switch, price-sensitivity and recommendation of the brand. Hetesi (2007) highlights that defining loyalty is not a simple task – either in the case of consumer or in the case of business-to-business sector. Furthermore, several loyalty clusters can be identified, which occur in consumer and in business-to-business sector with different weights. It shows that interpreting and defining loyalty can be depending from products, sectors and environment. Hofmeister-Tóth (2006) considers consumer decisions based on loyalty as routine decisions. However, if preference and commitment (such as attitudinal elements) appear, it is more difficult to make the consumers switching to another brand. According to Hofmeister-Tóth (2006), consumers who prefer more brands and switch among more brands can be considered as quasi brand loyal consumers. Furthermore, we can talk about repeated purchase if there is only satisfaction without commitment. Törőcsik (2007) also makes differences between true and quasi brand loyalty. The first one is based on affective elements: true brand loyalty exists if there is a strong affective involvement and commitment. While the second one, the quasi brand loyalty refers to a weak affective involvement in the interpretation of Törőcsik (2007).

It is worth mentioning the loyalty definition by Prónay (2011). There are behavioral and attitudinal components in Prónay's (2011) approach as well; however, he does not draw a sharp boundary between the different components. Both of the mentioned elements play role in his loyalty definition, attitudes create a basis for action. According to Prónay (2011), the types of loyalty can be described based on behavior and the strength of attitudes. If the repurchase is infrequent and the attitude is weak, there is no loyalty. Frequent repurchase coupled by weak attitude means a simple repurchase or a routine purchase, which do not have any kind of affective bonds. Infrequent repurchase and strong, positive attitude refer to the case of commitment, which assume a strong emotional bond to the product or to the brand. Prónay (2011) emphasize that commitment can exist even if consumers have never bought a given brand and they can recommend the given brand to others too. Finally, we can talk about insistence if frequent repurchase is accompanied by strong, positive attitudes. This case is actually a kind of commitment which is coupled by purchase. Consumers identify with the meaning of the brand and they generate positive word-of-mouth about the brand. This situation is similar to Oliver's (1999) ultimate loyalty or to Törőcsik's (2007) true brand

loyalty. According to Prónay (2011), the broader concept of loyalty covers simple repurchase, commitment and insistence, while the narrower definition of loyalty focuses on insistence.

The approaches and definitions described above combine the advantages of behavioral and attitudinal approaches. However, the definitions and approaches propose further problems and questions due to their variety. Based on the mentioned approaches, the next chapter deals with the occurring interpretation problems.

2.4. Problems in interpretation of loyalty

The first question occurs because there are more approaches concerning the definition of loyalty. Behavioral or attitudinal approach is better? In my point of view, we cannot find an answer to this question. A complex approach is necessary to describe the concept of loyalty, but the complex approach still contains a wide range of definitions. A more relevant question is which elements are included in the complex approach. There are models where positive attitudes towards the brand, commitment and repurchase are needed (Bloemer – Kasper 1999, Pritchard et al. 1999). There are studies where higher levels of loyalty contain the concept of brand communities (Oliver 1999, Prónay 2011), but recommendation of the brand can also occur among definitions (Hetesi – Rekettye 2005, Zeithaml et al. 1996).

The next question can be how the loyalty components are related to each other. In Oliver's (1999) theory, cognitive and affective components cause behavioral consequences, but ultimate loyalty takes place above all of the elements. However, commitment can cause a need for a further repurchase according to Bloemer and Kasper (1995). Prithcard et al. (1999) have a similar approach: loyalty can be interpreted as an outcome or as a consequence of commitment. Furthermore, Oliver (1999) interpret brand communities as a manifestation of ultimate loyalty, but according to Drengner et al. (2012), the level of the psychological sense of a brand community influences repurchasing intentions. This contradiction can be led back to the previously described interpretation of loyalty. If we consider loyalty as an outcome, the intention for repurchase can be the consequence of belonging to a brand community.

Furthermore, it is important to mention that loyalty can be interpreted relatively. Dick and Basu (1994) pointed out that attitudes toward a brand can be interpreted relatively, which means a given buying or consumption situation. Different occurrence of loyalty in consumer and business-to-business sectors appeared in Hetesi's (2007) study as well. Prónay (2011) also highlights that repurchase can be interpreted relatively. A frequent repurchase is different for example in the case of clothes and in the case of a luxurious car or in the case of an

annually organized music festival. If brand communities are interpreted as a level of loyalty, which occurred in Oliver's (1999) study, another group consumption and brand community centered article (Hetesi – Prónay 2014) can be mentioned. The authors (Hetesi – Prónay 2014) draw different types of brand communities in a scale; in one end of the scale, the attractiveness of the brand is dominant. This is a case for simple brand communities, where Nokia or Apple brands can be mentioned for example (Hetesi – Prónay 2014). In the other end of the scale, the attractiveness of the community is dominant. This is the case of brand-subcultures, where the VW Beetle or the Harley-Davidson fan club can be said as an example. In my opinion, the first two described contradiction (elements of loyalty definition, relationship among the elements) cannot be resolved due to the relative interpretation of loyalty. A more exact definition of the loyalty can be described if the product and the situation are accurately known. Therefore, defining loyalty in the case of music festivals needs to interpret the phenomenon in the context of music festivals.

3. Loyalty in the case of music festivals

It is necessary to describe music festival models which have already examined loyalty to define loyalty in the case of music festivals. After that, a more accurate description of music festival loyalty can be drawn.

3.1. Approaches of music festival loyalty

Among studies concerning music festivals, there have been published articles dealing with satisfaction, branding issues or the success of festivals. However, studies focusing on music festival loyalty have been occurred infrequently. Yoon et al. (2010) defined loyalty as behavioral intention, which can be measured by positive word-of-mouth, recommendation of the event and re-attending intention.

Leenders (2010) deems that loyalty is a success factor of music festivals. Customer equity has a key importance in the case of music festivals in the long run, and the value of customers depends on loyalty mostly. The author (Leenders 2010) measured loyalty by re-attending intention: respondents had to evaluate how many times they intend to visit the festival again in the following five years. It is worth mentioning that there were positive emotions among loyalty influencing factors. Consequently, attitudes and behavioral elements also appeared in the model.

Grappi and Montanari (2011) highlighted that increasing consumer retention rate is necessary for enhancing music festival efficiency. Re-attendance has an important role in success, because loyal visitors are those who can recommend the festival to others. They pay less attention to the competitors and are more tolerant towards a lower level of satisfaction. The authors (Grappi – Montanari 2011) focus on re-attending intention, but highlights that in the case of cultural consumption, variety seeking is one of the motivations factors in attendance. Therefore, the role of loyalty is more important in the case of music festivals. Re-attending intention was based on the definition of Zeithaml et al. (1996), thus respondents had to evaluate whether they intend to re-visit the festival again, they recommend the festival to others, they encourage others to visit the festival and they say positive things about the festival. It is noticeable that items concerning recommendation of the festival have greater role in the definition than the ones concerning re-attending intentions.

The re-attending intention is in the focus in the study of Drengner et al. (2012) too. In their article (Drengner et al. 2012), loyalty is a strong commitment towards re-attending the event, because in the case of services, such as a music festival, future intentions of consumers have key importance. The authors (Drengner et al. (2012) measured re-attending intentions by its different phases.

In the studies concerning music festivals, the complex loyalty approach appeared where re-attending intention is a central factor. Recommendations about the event occurred as well, but it had a different role in the described studies. After describing the music festival loyalty models, a possible definition and assessment framework of music festival loyalty will be discussed.

3.2. Definition of music festival loyalty

It is necessary having a complex approach in the case of music festival loyalty, therefore attitudinal and behavioral components take place in my approach as well. It is apparent that affective elements and commitment should be considered in a music festival loyalty definition. However, it is also important when the consumers will re-attend the festival; therefore re-attending intention should also appear in a music festival loyalty definition. It is questionable whether the components of loyalty should be treated separately. The answer is yes, measuring attitudinal and behavioral loyalty separately is highly important. Furthermore, there are elements with different meanings even in the case of attitudinal approaches. There is a deeply held commitment in Oliver's (1999) ultimate loyalty definition,

but brand communities occur within the frame of the same definition as well. It is true that commitment or the sense of belonging to a brand community is a deep and strong positive emotion towards a brand. However, the role of a brand can be stronger in the case of commitment, and the sense of belonging to somewhere can be stronger in the case of brand communities. Due to the differences in meanings, it is worth treating even the attitudinal elements of loyalty separately.

Based on the statements above (Yoon et al. 2010, Leenders 2010, Drengner et al. 2012), the narrower definition of loyalty can be identified by re-attending intention. One of the advantages of applying re-attending intention that it refers to the future. Furthermore, in a case of music festivals, if a survey is conducted during or after the event, one of the most important questions can be the future re-visiting intention.

However, it is necessary consider the elements of attitudinal loyalty as well, where commitment and psychological sense of a brand community can be mentioned. Concerning the relationship between the narrow definition of loyalty and the affective elements, I accept the theories of Bloemer and Kasper (1995), Pritchard et al. (1999) and Drengner et al. (2012), according to which affective elements of loyalty can influence re-attending intention. The reason of my choice is that I defined the narrow concept of loyalty by re-attending intention. First, some kind of emotional bond should be exist to develop the intention for a future re-attendance. In my opinion, if visitors have positive attitudes and experiences about the festival; or if they sense it is good belonging to the community of the given festival (brand), there is a higher chance for visiting the festival again.

It can be questionable where the recommendation intention takes place in the described narrower and broader loyalty definitions. Based on the study of Grappi and Montanari (2011), it is worth measuring recommendation intention separately from re-attending intention, from commitment and from the sense of brand community. However, similar to re-attending intention, recommendation intention can be treated as an outcome of affective elements. I suppose, if a visitor has strong emotional bonds, there can be a higher chance for recommending the festival to others. However, describing the phenomenon of recommendation and word-of-mouth can be the goal of a different study.

4. Conclusions

The purpose of this study was to describe the concept of loyalty in the case of music festivals. After a discussion about the loyalty approaches and general definitions, special

music festival loyalty models and definitions were taken into consideration. It can be concluded, that generally a complex approach is needed for examining loyalty. However, there are several differences even within complex approaches as well. This differences can be explained by a product- and situation depending interpretation of loyalty. In the case of music festival models, still there are some differences, but a frequently applied definition is the re-attending intention, which can be interpreted as an outcome of affective components. Based on the statements above, this paper suggests using re-attending intention as a narrow definition of loyalty. However, it is also important to include affective components (e.g. commitment, sense of a brand community) in a complex music festival loyalty model.

Examination of loyalty can be highly important for the managers of music festivals; besides efficiency considerations, an important question for music festival managers whether the visitors will attend the festival again. However, music festivals can be considered as a special service, which can be an interesting research field for the scientific sector as well. From the point of view of both sectors, this paper can offer a possible framework for further examinations.

However, there are some limitations of this study. If we consider loyalty as an outcome, besides the affective components, several other influencing factors can exist. This paper did not covered questions such as defining the relationship between loyalty and satisfaction in the case of music festivals, but it would be necessary for developing a complex music festival loyalty model. The concept of festival recommendation can also be mentioned among further research questions; and the clarification of the role of brand communities in the case of music festivals should be described in a more detailed way. This study offers a basis and a framework for the research questions mentioned above.

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2. Customer Reactions to Service Elimination

Ágnes Somosi − Krisztina Kolos

This research aims to analyze service elimination with a special focus on churn as a potential outcome of service elimination process. Service elimination has been rather a neglected field among marketing researchers so far with only a few studies describing the characteristic of the service elimination process within firms. Only multi-sector studies include telecommunications in the sample, financial services are in focus of service elimination research. We expect to contribute to service elimination and customer retention literature with combining these fields in our research. Practical relevance is ensured according to our prior qualitative research concluding that there is a rationale behind making the process more efficient, thus reducing customer churn during service elimination.

The paper discusses the results of an experimental design based on scenarios that is focusing on the customer side: 2x2 between subjects experiment based on scenarios. We incorporated two scenarios into our research: economic and psychological costs. The main result of the experiment is that economic cost has stronger effect on customer reactions than psychological cost in case of service elimination. The next phase is going to be a 3x3 between subjects experiment based on scenarios, adding the compensation variable to our current research, as based on the literature compensation has an effect on customer complaints. In the case of a forced migration during service elimination we expect compensation to make customers more satisfied, loyal and committed, thus churn to be lower.
The limitation of the current study is that we applied a convenience sampling and did not perform the manipulation checks that we plan to do in the next phase.

Keywords: service elimination, loyalty, churn, telecommunications, experimental design

1. Introduction

Service elimination decision is mainly related to the need of managing demand and leading the customers out of the service that is about to be dropped (Harness − Mackay 1997). Service elimination has strategic importance too: *"product elimination can generate outcome benefits for the organization in four areas: simplification/concentration of management and sales effort; improved product portfolio performance; customer management related; improved physical and financial resource management"* (Harness − Harness 2012, p. 56).

Service elimination is highly relevant in the telecommunication industry, due to the short life-cycles of services, though not yet used as a context for studying service elimination. To our knowledge service elimination studies are focusing on financial services (Argouslidis 2007, Argouslidis − McLean 2003, Argouslidis − Baltas 2007). Service elimination may have many potential outputs affecting satisfaction, loyalty for example. In our study we propose to incorporate churn as a potential output of service elimination which has practical relevance in

telecommunications as well. Based on the Hungarian telecommunications market, the trend is clear: voice subscriptions are strongly declining (Analysis Mason 2014) with basically constant market shares by the three operators (T-Mobile, Telenor and Vodafone).

These trends show the difficulty of acquiring new clients, which is possible only if operators convince clients to change their current operator. Therefore, it is important to examine consumer preferences as accurately as possible.

The other important remark in this context is that operators should no longer focus on individual clients, but rather on High Value Customers (HVC) in the business segment, who have numerous SIM cards. This is perfectly illustrated by the case of MOL as well National Media and Infocommunications Authority (NMIA 2014).

So our conclusion is that even in an oligopolistic market, as in Hungary, because of the declining voice trends, operators have to create new types of portfolios, in which the role of SE will be key: eliminating services enables the redesign of the whole service portfolio.

2. Literature review

The focus of the paper is service elimination (SE), which was studied only by a small group of researchers (Argouslidis 2007, Argouslidis − McLean 2003, Argouslidis − Baltas 2007), although the topic has also relevant managerial implications that will be highlighted later in the paper.

- The importance of the topic of SE can be underlined from two main aspects: There are gaps in academic research in many subfields: our literature review clearly shows the possible research directions, such as customer perspective studies and other sectors than financial services;
- There is a need from companies as well to build a proper SE strategy, as they are currently managed on an ad-hoc basis.

A review article (Avlonitis − Argouslidis 2012), provides an overview of the whole field and can be used to position our research objectives. The authors list all the areas ever studied within SE based on two perspectives: firm and customer perspective. There are three phases of the SE process itself: 1. the pre-elimination phase deals with the causes; 2. the PEDM (product elimination decision-making) process determines the attributes of the elimination process; 3. and the post-elimination phase focuses on the result of the SE.

One important implication of the literature review is that the first two groups are basically covered, what remains relatively unstudied is the post-elimination phase. Second is the customer side, which is rather neglected. This is why we focus on the success measures of SE from the customer side.

The literature review showed that the methodology of the studies is mostly a mixed qualitative-quantitative type. Argouslidis used the combination of qualitative and quantitative research: in-depth interviews and mail survey (Argouslidis − McLean 2003). The article presents qualitative and quantitative empirical evidence on a) the way in which British financial institutions analyze the deviant performance of financial services, which have been identified as candidates for elimination and b) the remedial actions that they consider in order to restore a deviant performance, when possible and feasible.

His later studies in the financial sector (Kent − Argouslidis 2005, Argouslidis 2007) applied similar methodology, exploring formalization in financial institutions' product line pruning decisions, and maintaining a link between service elimination decision-making and structural characteristics of organizational decision-making. Service elimination decision and implementation is also key in the work of Avlonitis (Gounaris et al. 2006).

Our study combines SE with churn, which is usually not adapted to measure the effect of SE on customers. We have chosen churn, because it is a frequent tool in service industries to determine the satisfaction of customers with the current service.

Risselda studies the evolution of churn prediction models (Risseladaet al. 2010) that is important to us, because we have found that one key KPI of measuring the success of SE is the reduced churn rate. That is why we intend to combine churn and SE.

Knox measures the likelihood of churn by measuring the effects of prior complaints, prior purchase and complaint recovery (Knox − Oest 2014). They find that the number of prior complaints increase the probability of churn, whereas complaint recovery leads to less churn. The surprising fact is however that the *"effect of purchase reducing churn is much higher (315 days) than the effect of complaints (8 days)"* (Knox − Oest 2014, p. 48). This means that if the customer does not leave after the first complaint, he/she is expected to stay with the company.

So based on the churn literature, SE can be viewed as a situational factor that modifies customer satisfaction and engagement. Thus the models determining normal customer churn rate needs to be modified in order to assess the effect of SE. In the SE and churn literature we see a huge potential in adding these results that might help to reveal the aspects that make churn modeling different in case of SE.

3. Research questions and methodology

The aim of the research is to analyze service elimination strategies in the context of the telecommunication industry, because it was not studied before and it is ideal to understand the special characteristics of services during elimination.

The research will focus on the following research question: What is the relationship between perceived costs of service elimination and satisfaction, loyalty and churn from the customer's perspective?

The research is based on experimental design. Our aim with the experimental design based on scenarios was to determine the relationship between SE and economic and psychological cost. We used churn as the primary factor to decide whether the elimination was successful. Based on the literature review we prepared a 2x2 between subject experiment based on scenarios (N=163); with independent variables of economic and psychological cost (Homburg et al. 2010).

The independent variables are perceived economic cost and perceived psychological cost as proposed by Homburg (Homburget et al. 2010). Economic cost is incorporated into the scenarios as the cost of the service package for the customer, which is defined as a Dummy variable that takes the value of one if the cost of the offered service package is high (worse offer), and zero if the cost is low (better offer). As Homburg did not specify the exact measure of psychological cost, we defined it as whether the SE is expected for the customer, which means that the role of notice will be emphasized here: if the customer gets a prior notice about the SE, we expect psychological costs to be lower, and their effect to be marginal.

To measure the effects between SE and the dependent variables, we used the valid measures in each field: churn, satisfaction, loyalty, WOM, affective and calculative commitment. The following hypotheses are proposed:

H1: Psychological cost increases churn and WOM, decreases satisfaction, loyalty, and commitment

H2: Economic cost increases churn and WOM, decreases satisfaction, loyalty, and commitment

H3: There will be an interaction effect for psychological and economic costs.

List of dependent variables: churn, satisfaction, loyalty, WOM, affective and calculative commitment. Short description of scenarios:

1. Better service package after elimination; customer receives letter and call notification before the elimination (no economic with no psychological cost).

2. Worse service package after elimination; customer receives letter and call notification before the elimination (economic cost with no psychological cost).
3. Better service package after elimination; customer does not receive call notification before the elimination (no economic cost with psychological cost).
4. Worse service package after elimination; customer does not receive call notification before the elimination (economic cost with psychological cost).

We now briefly introduce the scales used in the experiment. Aksoy et al. (2013) measure the relationship between overall satisfaction and loyalty intensions of mobile telecommunications customer. They found that satisfaction is an important predictor of recommendation/repurchase.

Regarding word of mouth (WOM) we used Anderson's scale (Anderson 1998). He measures the effect of customer satisfaction on loyalty. They used a utility-model of WOM and data from Sweden and the USA. The results show an asymmetric U-shape figure: the highly dissatisfied customers engage in higher WOM than highly satisfied ones, but these are the highest values. They also found that negative communication has greater effect on WOM than positive communication. They suggest that it would be important to understand the differences across product and service categories. Regarding this, our research contributes to the analysis of the effect of service elimination in telecommunications on WOM. We expect WOM to be higher if the customers are not satisfied, which gives the support for H1 and H2 regarding WOM.

Gustafsson et al. (2005) used scales for measuring satisfaction, calculative and affective commitment that we incorporated in our research. They investigate the relationship between customer satisfaction on commitment and customer retention. They define customer satisfaction as the driver of customer retention.

There are two types of commitment: affective and calculative. This is very similar to the categories Homburg defined regarding product elimination: psychological and economic cost (Homburg et al. 2010). As our research has references to Homburg's terminology, we decided to use Gusftaffson's scales to measure it, as Homburg has not defined clear categories within these main types.

We used the summary of Pamies for valid measures regarding loyalty (Pamies 2012). Furthermore, we use churn as a measure for loyalty with Zeithaml's scales (Zeithaml et al. 1996).

4. Results of the study

General Linear Model (GLM) was used to assess the effect of economic and psychological cost on churn, satisfaction, loyalty and commitment. The results of the differences in means according to the four scenarios are summarized in Table 1.

Psychological cost (0: no cost; 1: there is a cost): The effect of psychological cost on satisfaction and affective commitment is higher when no psychological cost is present as expected. Loyalty, churn and WOM are not significant here. So H1 is partially supported.

Economic cost (0: better service package; 1: worse service package): In case of the economic cost we see that all dependent variables behave as expected based on our hypothesis: economic cost increases churn and WOM, decreases satisfaction, loyalty, and commitment. So H2 is supported.

Table 1 Mean values of dependent variables in the groups based on independent variables

		Dependent variable				
Independent variables		**Satisfaction**	**Loyalty**	**Churn**	**WOM**	**Affective commitment**
Psychological cost		F=7,706 sig. 0,006	F=1,468 0,227	F=0,542 sig. 0,463	F=3,236 sig. 0,074	F=7,306 sig. 0,008
	Yes	**2,71**	2,70	2,87	4,17	**2,29**
	No	**3,14**	2,84	2,80	3,88	**2,65**
Economic cost		F=145,562***	F=141,885***	F=185,536***	F=10,251 sig. 0,002	F=87,606***
	Yes (worse)	**1,97**	**1,91**	**3,76**	**4,26**	**1,83**
	No (better)	**4,04**	**3,77**	**1,75**	**3,75**	**3,23**
Economic cost	**Psychological cost**	F=6,991 sig. 0,009	F=7,08 sig. 0,009	F=7,45 0,007	F=0,358 sig.0,550	F=8,149 sig. 0,005
Yes (worse)	**Yes**	**1,95**	**2,02**	**3,61**	4,45	**1,84**
	No	**1,98**	**1,80**	**3,91**	4,07	**1,82**
No (better)	**Yes**	**3,58**	**3,47**	**2,00**	3,84	**2,82**
	No	**4,51**	**4,08**	**1,49**	3,65	**3,65**

Note: significant means are in bold
Source: own construction based on GLM outputs

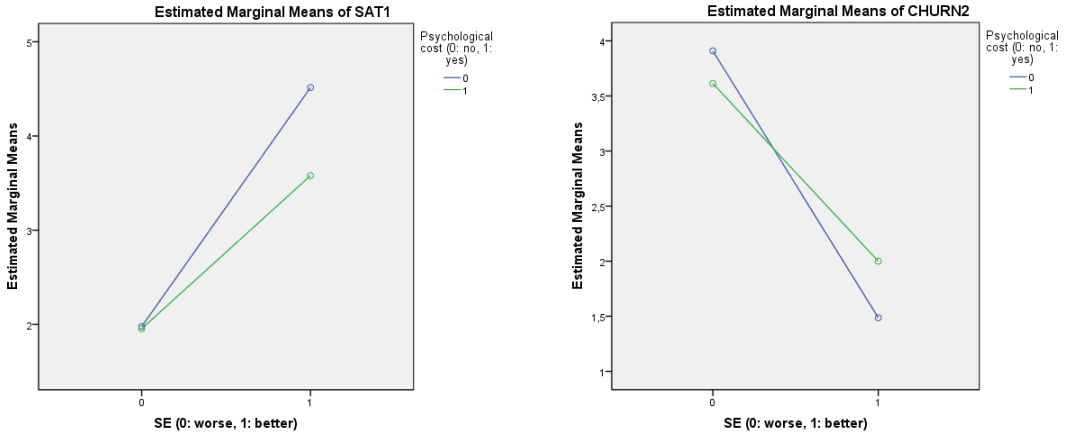
Interaction between economic and psychological cost: The interactions gave surprising results with worse service package and psychological cost: although satisfaction is higher in case of no psychological cost, loyalty is the exact opposite, and churn as well. This means that more customers would leave the company if they receive a worse service package offer, but they are receiving a prior notice compared to not receiving such notice. The relationship

between satisfaction and affective commitment also raises some questions, because psychological costs make them less satisfied, however they are more committed.

The interactions between the better service package and psychological cost are meeting our expectations: customers are more satisfied, loyal and committed with the better service package if they receive a prior notice compared to not receiving one, and also churn is lower. WOM is not significant here. So H3 is partially supported.

The contradictory results are clearly shown also on the plots of satisfaction and churn: satisfaction is higher in case of a better service package offer, where psychological cost decreases satisfaction. Churn is higher if psychological cost is not present and worse service package increases churn as expected (Figure 1.).

Figure 1 The effect of economic cost (SE) on satisfaction and churn in connection with psychological cost



Source: own construction based on GLM outputs

The limitation of the current study is that we did not perform the manipulation checks, which should be added before the larger scale experiment to see whether the scenarios measure the same as we intended on different samples.The next phase of our research should be to refine the model based on the experiment questionnaire's results, and use a larger sample to test the relationship between SE and its main success factors. A further question is to include compensation in the test, as the literature suggests differences in case of customer complaints with compensation.

5. Conclusions

The aim of this research is to gain new knowledge in the field of SE, in a way that is useful for practitioners as well. From an academic point of view our literature review showed

that there are just a few papers to compare with, especially in the telecommunication sector. Most studies were done in the product field, within services, especially financial services were analyzed. Only multiple-sector studies include telecommunication operators in the sample, but they do not focus on their main characteristics. This may also give some new insights that could enlighten the SE area from this perspective.

From a managerial perspective we think that the planned research project can solve the current SE-related problems of companies: as SE is usually not dealt on a strategic level at most companies, the whole SE strategy could be improved, and with more focus on the customer during the SE process, customer churn could also be reduced.

Our literature review on customer insights to SE concluded that churn is a common measure of customer satisfaction, however not used in the special case of SE. Practical relevance of the topic is also confirmed by prior in-depth interviews.

Our research including experimental design based on scenarios aims to analyze whether we can generalize these findings in case of SE, and what limitations are not applicable in our combined case of SE and churn prediction.

We used experimental design to determine the effects between SE and its main success-factors, primarily churn, and other variables related to customer reactions (satisfaction, loyalty, WOM and commitment): all our hypotheses are supported, only the worse service package option gave contradictory results in terms of interactions with psychological cost, which means that economic cost has stronger effect on customer reactions than psychological cost in case of service elimination.

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3. What Role Geographical Distances and Cultural P**roximity** Play in Bilateral Wine T**rade of Hungary?**

Jeremiás Balogh

Wine plays an important role in Hungary as well historically and culturally. Hungary export wines to different part of the world, consequently the Hungarian wine trade could be influenced by geographical and cultural factors. The effect of the cultural and geographical proximity on international trade has already proven in international trade literature. The size of bilateral trade flows between any two countries can be approximated by the so-called Gravitation Theory of trade. The gravity equation is empirical evidence for relationship between the size of economies, their distances and the amount of their trade.

The aim of my paper is to analyse the effect of cultural and geographical proximity on bilateral wine trade between Hungary and its trading partners employing gravity model for a period of 2000 and 2012. The panel data of analysis is derived from World Bank WITS, WDI and CEPII, WTO databases. The explanatory variables of the model are geographical distance, common language and ethnography, contiguity, landlocked plus bilateral WTO memberships. I apply OLS, Random Effect and Pseudo Poisson-Maximum-Likelihood estimator to calculate the gravity equation. The results show that in case of Hungary cultural similarity and trade liberalisation have positive while geographical distance, landlocking and contiguity have negative impact on wine export.

Keywords: bilateral wine trade, Hungary, cultural and geographical proximity, gravity model

1. Introduction

The wine is a special product from economic, cultural and sociological point of view in the major wine producer countries. Wine also plays an important role in Hungarian culture historically. The importance of the Hungarian wine culture show that the wine production in the Carpathian basin dates back to the Roman times.

The evidence of Hungarian winemaking history is that Tokaj-Hegyalja was the world's first classified vineyard in 1772 (Tokaji 2015). Hungary has 22 wine regions and 67 thousand hectares vineyard area. More then 12 000 companies are involved in wine industry in Hungary (Sidlovits − Kator 2007). Hungary is able to export 450-650 thousands hl wine annually to the various parts of the world.

Worldwide famous Hungarian wines like Royal Tokaji Aszú Essencia 1999, Tokaji Furmint 2011, Vylyan Pinot Noir 2006, Sauska cuvée 5 2009 etc. are ranked among the Top

100 wines by Wine Spectator[1]. The Hungarian wines are in present on international market, consequently the wine trade would be influenced by geographical and cultural factors.

The effect of the cultural and geographical similarity on international trade has already proven in international trade literature. According to Tinbergen the size of bilateral trade flows between any two countries can be approximated by the so-called "gravity equation" by analogy with the Newtonian Gravitation Theory (Tinbergen 1962). The Newton's Law of Gravitation states that: "*any two bodies in the universe attract each other with a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between them"* (Newton 1729). Similarly, the gravity equation of trade is evidence for relationship between the size of economies, their distances and the amount of their trade.

Some articles have already applied gravity models to analysing wine trade in European Union or other wine region of the world, in contrary gravity regression studies that investigate the Hungarian bilateral wine trade has not published yet.

The aim of my paper is to analyse the effect of cultural and geographical proximity on bilateral wine trade referring to Hungary employing gravity model for a period of 12 years (2000-2012). I investigate general hypothesis of the impact of bilateral geographical distances and cultural similarity and the effect of free trade agreements on Hungarian bilateral wine export.

2. Literature review on Gravity model of wine sector

Regarding the New Trade Theories, the gravity models are very popular in the international trade literature. However, only a few researches were published in empirical trade literature which analyse wine trade by gravity equation.

Pinilla and Serrano (2008) analysed the long-term determinants of Spanish table wine exports by gravity model and panel data estimation technique between 1871 and 1935. The results of their model showed that Spanish table wine was exported to countries with large growing markets that were close both culturally and geographically. It is strong evidence for the cultural similarity hypothesis of general gravity models. Dascal et al. (2002) employed a Gravity model approach in order to analyze the main factors affecting the trade flows of wine in EU-12 countries for the period 1989-1997. Their results revealed that wine trade was

[1] Wine Spectator is an American magazine that each year announce the Top 100 Wines

positively influenced by an increase in GDP per capita, since greater income promotes trade. De Blasi et al. (2007) examined the magnitude of the trade flows for high quality wine from Italy to its main importing countries analysed by the gravity model. Moreover the enlargement of the EU encouraged exporters of high quality Italian wine because of the absence of trade barriers. Fertő et al. (2013) investigated the impact of IT and communication costs on wine export focusing on the EU-27 for a period of 1998-2011. Their results supported the validity of standard gravity model variables like market size, trade costs, common language and colonial links. Bianco et al. (2013) analysed the Argentinean wine industry by gravity model. They concluded that wine flows can be explained by importer countries' economic and political characteristics.

These empirical evidences motivated me to establish a gravity model for Hungarian wine export since that this field were not covered yet by the empirical literature.

3. Methodology and estimation method

Applying gravity model of trade requires some basic assumptions on trade. Whatever the price, a country will consume at least some of every good from every country (Anderson 1979). All goods are traded, all countries trade and in equilibrium, national income is the sum of home and foreign demand for a unique good that each country produces (e.g. GDP). For this reason, larger countries import and export more (Bacchetta et al. 2012). The higher transport costs generally reduce trade flows. Based on these standard assumptions various types of Gravity model developed in trade literature. I employ standard Gravity model in this study. The standard formula of Gravity equation can be calculated as follows (Anderson - van Wincoop's 2003):

$$X_{ij} = G * S_i * M_j * \varphi_{ij} \qquad (1)$$

where X_{ij} is value of exports from i to j,
M_j denotes importing country's GDP,
S_i comprises exporter's GDP,
G is a variable that does not depend on i or j e.g. level of world liberalization,
φ_{ij} represents the ease of exporter i to access of market j.

The log-linear model of gravity equation can be calculated by taking simply the natural logarithms of all parameters (Bacchetta et al. 2012):

$$\ln X_{ij} = \ln G + \ln S_i + \ln M_j + \ln \varphi_{ij} \qquad (2)$$

A number of variables are generally used to capture trade costs such as bilateral distance, landlocking, common borders, language or cultural features such as post-colonial history. There is much evidence of these proxies e.g. transport costs increase with geographical distance and they are higher for landlocked countries and islands by contrast they are lower for neighbouring countries. In addition, trade costs are probably lower for countries whose have a common language or other relevant cultural characteristic because they can understand better each other's culture (Bacchetta et al. 2012). Trade agreements are generally included in the form of dummies such as WTO membership. However, the use of gravity data brings up several problems as well.

3.1 Concerns with gravity data

We have to face the following problems if we use gravity data. The observations in gravity data would be heterogeneous in a variety of ways. Consequently homoscedasticity assumption of the error term in regression is often being likely to be violated. The use of bilateral panel data has the advantage of mitigating the bias generated by heterogeneity across countries. In a panel the country-pair heterogeneity would cause concerns that can be controlled for using country-pair fixed effects including dummies (Bacchetta et al. 2012).

Moreover gravity panel data would contain zero trade values. The zero trade flows reported in the data either would be really zero or reflects systematic rounding errors associated with very small trade flows therefore dropping zero trade flows out of the sample may result in a loss of useful information (Linders − de Groot 2006). Number of estimation method are suggested to calculate gravity models such as standard Ordinary Least Squares, Random Effect or Fixed Effect, Tobit, Poisson or Heckman estimators.

Zero trade flows can be handled by estimating the model in levels by the help of Pseudo Poisson maximum likelihood (PPML) estimator. Santos and Tenreyro (2006) highlight that in the presence of heteroscedasticity the PPML is a robust estimator.

3.2 Econometric specifications

My unbalanced panel data set includes bilateral wine trade data of Hungary with 103 trading partner for 12 years (2000-2012), giving 787 observations. The dependent variables of the model come from World Bank World Integrated Trade Solution (WITS) database in HS-6

level, product code 2204[2], used in level form (World Bank 2014). The economic size is included by exporter and importer's GDP, measured in constant 2005 US dollar (WDI 2014). The proxies for geographical distances are the simple distances of most populated cities in kilometres and island-landlocked dummies. The cultural distance is included by common language and ethnography, common border by the contiguity dummies. The impact of free trade area is represented by dummy of WTO memberships. The set of bilateral covariates come from Research and Expertise Centre on the World Economy (CEPII 2014) database. Information on WTO memberships can be found on WTO official website (WTO, 2014). I employ three different models: OLS and Random Effects suggested by Baier and Bergstrand (2009) and PPML suggested by Santos and Tenreyro (2006) to estimate the gravity equation for Hungarian wine trade. The detailed information about the variables can be found in Table 1. The estimations were run without zero trade flows assuming that they are derived from missing trade data. In all models fixed effects are included by importer and year dummies.

Table 1 Description of variables

Dependent variable:	
wine export	Hungarian bilateral wine export, value in 1000 USD (HS-6 classification level, product code of wine: 2204) used in level form
Independent variables	
lnExpGDP:	GDP of Hungary as wine exporter (GDP constant 2005 in US dollar) used in logarithm form
lnImpGDP	GDP of wine importer as trading partner of Hungary (GDP constant 2005 in US dollar) used in logarithm form
lndist	simple distance of most populated cities in km (between Hungary and trading partners) used in logarithm form
Independent dummy variables	
contiguity	1 if the two trader countries are contiguous and 0 otherwise
comlang_ethno	1 if a language is spoken by at least 9% of the population in both countries and 0 otherwise
landlocked:	1 if one of the traders are landlocked and 0 otherwise
WTO:	1 if both traders are member of WTO and 0 otherwise (it refers to Hungary and trading partners)

Source: own composition based on the sample

I estimated the following models (excluding zero trade flows):

OLS and Random Effect estimators

$$wine\ export = ln\ GDPExp + ln\ GDPImp + ln\ dist + contig + comlang\_off + landlocked + WTO$$

[2] Product code 2204: wine of fresh grapes, including fortified wines, grape must.

Pseudo Poisson-Maximum-Likelihood estimator

wine export= ln GDPExp + ln GDPImp + ln dist + contig + comlang_off + landlocked +WTO

The Table 2 presents the descriptive statistics of the included variables. Scale explanatory variables used in logarithmical form. The rest of the variables are dummies.

Table 2 Descriptive statistics of variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
wine_export	794	1301.76	3107.97	1.00	20635
lnExpGDP (HUN)	1339	25.39	0.08	25.22	25.48
lnImpGDP	1288	24.97	2.04	20.10	30.29
lndist	1339	7.97	1.08	5.07	9.81
contig	1339	0.06	0.23	0	1
comlang_ethno	1339	0.02	0.14	0	1
landlocked	1339	0.13	0.33	0	1
WTO	1339	0.84	0.36	0	1

Source: own calculation based on Word Bank WITS, WIDI, CEPII and WTO database

3.3 Pattern of Hungarian bilateral wine trade

Regarding the sample and analysed period, the majority of the wine export destinations (103 importers) are not neighbouring with Hungary (94%). It may be due to the fact that bordering countries like Austria, Romania, Croatia, Serbia and Slovakia also produce and export notable amount of wine (Table 3).

Table 3 Pattern of Hungarian bilateral wine export by trading partners (2000-2012)

Pattern of the Hungarian wine trade	Number of trading partners in case of non-zero wine export	Share
Number of neighbouring countries	6	6%
Number of non-neighbouring countries	97	94%
Total number of wine importer countries	**103**	**100%**
Number of countries with common language and ethnography	2	2%
Number of countries without common language and ethnography	101	98%
Total number of wine importer countries	**103**	**100%**

Source: own construction based on the sample and World Bank WITS database

The export destination' countries mainly have not common language and ethnography with Hungary (98%). It can be explained that the Hungarian language is rare and unique in the World. Moreover it is spoken only around Hungarian borders and ancient territory of Austro-Hungary Monarchy. However a number of Hungarian colonies live and work in European countries plus all over the World that may influence Hungarian wine trade as well.

Based on the sample's data we can predict that "contiguity" variable probably will not influence positively the wine export of Hungary. It also confirmed by the top 10 highest and lowest wine export destinations of Hungary because among the top 10 highest export destinations are not neighbouring countries at all, e.g. Germany or Czech Republic (Table 4). On the other hand these trading partners are not so far geographically. The lowest wine importer' countries in value consist mainly of Asian, African and long-haul countries like Chile, Cuba, Algeria and India. It can predict that trade costs increase by geographical distance and Hungary export less wine to countries far away.

Table 4 Top 10 highest and lowest wine export destinations of Hungary (2000-2012)

Top highest wine importer	Export value in USD	Top lowest wine importer	Export value in USD
Germany	18109000	India	1000
Germany	17559000	Chile	1000
Germany	17463000	Kazakhstan	1000
Germany	16941000	Cuba	1000
Germany	16764000	Cyprus	1000
Czech Republic	16337000	Syrian Arab Republic	1000
Germany	15867000	Luxembourg	1000
Germany	15622000	Cuba	1000
United Kingdom	14323000	Algeria	1000
Czech Republic	14105000	Tunisia	1000

Source: own construction based on the sample

4. Gravity regression results

In this part I interpret the regression results of gravity model concerning the Hungarian bilateral wine export. I estimated the linear-logarithm model of bilateral wine trade excluding zero trade flow assuming that zero trade flows referring to missing trade data and they may be not really zero. Preliminary tests confirm the presence of heteroskedasticity, thus I applied robust estimations. The OLS and Random Effect model can prove significant relationship between value of wine trade and its determinants. In case of Random Effect model the sign of common language and ethnography variable contradict to the expected result, suggested by

the gravity literature in addition the robust standard errors of estimated coefficients are very high. It shows that Random Effect is not the best estimator of the model. It is true for the OLS estimation as well (Table 5).

Table 5 The Gravity regression results of Hungarian wine export

	(1) OLS	(2) RE	(3) PPML
VARIABLES	wine_export	wine_export	wine_export
lnExpGDP	omitted	-1,206	omitted
		(5,445)	
lnImpGDP	1,406***	1,406*	2.833***
	(431.2)	(723.7)	(0.336)
lndist	-449.7***	-20,107**	-1.350***
	(99.52)	(9,079)	(0.108)
contig	-8,002***	-44,597**	-12.21***
	(2,400)	(20,189)	(1.938)
comlang_ethno	6,246***	-29,286*	5.876***
	(1,000)	(15,664)	(0.519)
landlocked	-2,067***	-522.8**	-4.723***
	(684.2)	(236.1)	(0.549)
WTO	2,591***	25,756**	5.048***
	(672.4)	(11,547)	(0.567)
Constant	17,008	571,517*	50.56***
	(39,753)	(312,502)	(19.22)
Observations	787	787	787
R-squared	0.929	0.929	0.957

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
OLS - Ordinary Least Squares, RE - Random Effect,
PPML - Pseudo Poisson-Maximum-Likelihood; lnExpGDP refers to Hungary
note: lnExpGDP was omitted because of collinearity in (1) and (3) models

Source: own calculation based on Word Bank WITS, WDI, CEPII, WTO database

As concerns the result of PPML estimation all coefficients of regression are significant, the standard errors are pretty much smaller and also have the expected sign as empirical literature suggests.

The contiguity variable is significant but has negative sign in all estimation. It confirms that Hungary does not export noteworthy wine to their bordering countries for the reason that they are also wine producer and exporter countries.

The results show that in case of Hungarian wine trade, the transport costs also increase in line with the geographical distance and they are higher for landlocked trading partners (if both traders are landlocked). The importer's GDP, common language and ethnography variables affect positively the Hungarian wine export as empirical evidences preliminary predicted. Furthermore, because of historical reason Hungary exports wine rather to Germany

or UK that to direct adjacent countries. Otherwise Germany is the most important trading partner of Hungary in terms of all products.

The geographical distance influences negatively the Hungarian wine export (significant coefficients) accordant with empirical results. The elasticity of trade to distance is generally between -0.7 and -1.5 in gravity models (Bacchetta et al. 2012) that is well satisfied by the estimated distance coefficients of Hungarian wine traders (-1.35 in PPML model). In addition if Hungary and its trading partners have already been member of the World Trade Organisation, it is affecting positively the Hungarian wine trade.

In summary, cultural similarity, economic size and trade liberalisation have positive while geographical distance, contiguity and landlocked have negative impact on Hungarian wine export in bilateral relations.

5. Conclusions and limitations

Wine plays an important role in Hungary historically and culturally. Hungary export wines to international markets therefore its wine trade would be influenced by geographical and cultural factors as well. The impact of geographical and cultural similarity on trade can be analysed by Gravity model of trade. The Gravity model is evidence for relationship between the size of economies, their distances and the amount of their trade by analogy with the Newtonian Gravitation Theory.

Only a few researches were published in empirical literature which explored wine trade by gravity equation. These empirical works provide exact link between cost of wine trade and cultural similarity or geographical distance.

In this paper, I employed standard gravity model for Hungarian bilateral wine trade. The proxies for wine trade costs were the bilateral distances and cultural similarity. The impact of free trade agreements were applied by dummy variables of bilateral WTO memberships. I applied three linear-logarithm panel regression models: OLS and Random Effects suggested by Baier, S. L. and Bergstrand, J. H. (2009) and PPML suggested by Santos Silva and Tenreyro (2006) to estimate the gravity equation for Hungarian wine trade. In all models country and time fixed effect were included by importer and year dummies.

The regression results showed that in case of Hungarian wine trade, the transport costs also increased in line with the geographical distance and they were higher for landlocked trading partners. The negative impact of contiguity variable proved that Hungary did not export notable amount of wine to their directly neighbouring countries for the reason that they

are also wine producers and exporters. The costs of wine export could be lower if trading partners both are member of the WTO that confirms the incentive role of the freer trade.

We can conclude that common cultural factors, economic size between Hungary and its wine trading partners can enhance trade while geographical distance and landlocked conditions make the wine export more expensive.

It has to be mentioned that the study have several limitations and restrictions. The analysed data are measured at macro level and did not take into consideration the quality of wine. The model assumed that wine products across countries are homogenous however wine is differentiated product. I calculated the model excluding zero trade flows assuming that zero trade flows are referring to missing trade data and they are not really zero.

Further research is needed in order to take into consideration other cultural and geographical factors of Hungarian wine trade or to calculate the models for longer time period.

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4. Network Revolution in Economic Geography

Sándor Juhász – Zoltán Elekes – János Gyurkovics

A relatively recent development in the field of economic geography, interested in the uneven spatial distribution of economic activities, is the less metaphoric and more formal involvement of network analysis tools in empirical strategies. Furthermore, with the diffusion of innovation systems thinking, and the emerging empirics of evolutionary economic geography, increasing attention is paid to the dynamism of spatial systems and networks. In this paper we review the theoretical background and recent empirical evidence on research topics of economic geography where network analysis and a dynamic perspective were adopted. These topics are (1) local knowledge networks behind clusters and (2) industrial dynamics of regional economies. Overall it is argued that the incorporation of a dynamic network approach in economic geography seems to be a promising line of research for the future.

Keywords: network analysis, economic geography, local knowledge network, evolution

1. Introduction

Economic geography is interested in the uneven spatial distribution of economic activities. The broad field of economic geography has been going through a relational turn lately: it pays even more attention to connections than previously. The use of networks for explanation purposes is not unprecedented in the literature on economic geography, but these researches have used networks in a rather symbolic and metaphorical way. Recently, due to the improvement of methodological and technical tools, both network thinking in conceptual frameworks, and the use of network analysis as a research method are gaining in popularity. Additionally, with the appearance of evolutionary thinking in economic geography, increasing attention is paid to the change in economic systems over time. Dynamic network analysis proves to be highly relevant for this kind of research.

Network analysis in economic geography shed light on the internal dynamics of clusters. It helped understanding the structure of networks behind them, identifying their most influential actors and also following their structural change over time. The growing literature on localised knowledge networks mainly deals with the flow of innovation related knowledge in connection with local learning processes, knowledge spillovers, industrial atmosphere and regional embeddedness. Network analysis opened up new ways to conceptual and empirical research on regional development as well. The diversification of regional economic activities,

often portrayed as a branching process relies on network methodology in identifying technological relatedness of firms and industries.

In this paper we review the literature on the diverse use of network methodology in the dynamic analysis of economic geography. We selected core publications for review based on them dealing with some aspect of economic geography, using network analysis as a research method, and focusing on the change of a network over time. Our paper is structured as follows. In the next section we outline the origin and contemporary significance of networks and network analysis in economic geography. In the third and fourth sections we present three key lines of research relying on network analysis: clusters, localised knowledge networks and regional economic evolution respectively. We end the paper with some concluding remarks.

2. Networks in economic geography

Researches using networks as methodological tools have been very common in natural sciences such as physics or biology for a long time. However since the middle of the 20th century networks as explanatory factors have become particularly popular in social sciences as well. As many social scientific discipline started to use networks (e.g. anthropology, sociology, economics), social network theory advanced in several fronts. Special notions were developed (homophily, preferential attachment) and mathematical methods (matrix algebra or graph theory) were integrated to this evolving field.

By the end of 1900s the network phenomenon has broken into the field of economics as well. This particular interest in networks was part of a general shift in thinking: the individualistic and atomistic approach was replaced by a more systemic and complex view which take into consideration the context of the objects of analysis and their relations (Borgatti – Foster 2003). The appearance and widespread acceptance of evolutionary economics could be one of the best examples in connection with this shift. Furthermore, the innovation system approach that builds on evolutionary theory is also a good example since it deals with innovation as an interactive process where – besides the actors – the relations, connections are equally important (Vas – Bajmócy 2012). We also have to mention Granovetter's work regarding embeddedness. He argues that every process, every economic action is necessarily embedded in their societal, cultural and institutional environment (Granovetter 1986). Therefore these processes always affected by social relations and interactions and they could be understood better if we study them in their context.

Notwithstanding the network theory have been flourishing in organisational researches (Borgatti – Foster 2003, Csizmadia – Grosz 2011) recently it has gained serious attention in economic geography as well (Ter Wal – Boschma 2009). One of the possible antecedents of this debate is the theory of 'space of flows' by Manuel Castells (1996). He discusses whether places or relations, networks are more relevant for the competitiveness of firms. According to his study the notion of 'space of places' refers to that being in the right place matters for learning and innovation while 'space of flows' focuses on relations that is, being part of a network is what matters truly (Ter Wal – Boschma 2009, Castells 1996).

Initially the use of networks in economic geography to explain phenomenon such as regional development, knowledge flows, clusters or industrial change was rather symbolic and neglected any theoretical or methodological underpinnings (Glücker 2007). However as a 'relational turn' has occurred in economic geography network analysis method has become an integrant part of these types of researches. All in all economic geographers started to pay more attention to relations than spatial dimension and started to apply network analysis methods to study inter-organisational interactions and knowledge flows (Ter Wal – Boschma 2009). Thus, network analysis has gone beyond visualization and become an appropriate analytical tool with many proven models and methodologies.

Most of the studies in economic geography that use network analysis as a new method deal with clusters. This is because it was perceived that firms geographically close to each other develop and maintain extensive local networks which affect their economic performance in a positive way. This assumption was implicitly connected to the unrestricted flow of specialised knowledge inside the industry as proposed by Marshall. However as Giuliani (2007) and many others showed it later, these networks are unevenly distributed among firms. Moreover, these (knowledge) networks are rather selective, thus many firms that are involved in the business network are excluded from the knowledge network of the same cluster. In addition firms located in a significant geographical distance may also be part of the cluster's knowledge network. This is because (knowledge) networks are social and not territorial constructs (Ter Wal – Boschma 2009).

However most of these studies have adopted a static analytical perspective, meaning they capture the whole network at a certain point in time. Basically, they provide us a snapshot of the network. These researches mostly focus on computing certain network indicators and compare these indicators to the performance of firms or the whole network, or to identify unique positions in the structure. Nevertheless none of these studies have been interested in how these networks come into existence or how they change over time? More

specifically what drives the formation of networks? How ties are created or dissolved? Thus, a dynamic network approach in economic geography is a rather overlooked field, but it might provide a better understanding for many of its research areas such as the geography of innovation, knowledge flows or industrial evolution.

Dynamic network approach always studies the whole network structure with an analytical focus on dyadic tie formation. On one hand it looks for the changes that a new tie induces or dissolution of an old one causes in the whole network structure. On the other hand it investigates the impact that the structure has on the formation (or dissolution) of the next tie (Glücker 2007). One of the key concepts in the dynamics of networks is preferential attachment (Balland et al. 2013a, Ter Wal – Boschma 2009). This notion explains the growth of networks by arguing that it is more likely that a new node will link to the most central node of the network than to other nodes (Barabási – Albert 1999). In other words a node which has many links to other nodes is more attractive to be connected with (Balland et al. 2013a). This also implies that central nodes become more central while peripheral nodes tend to remain peripheral (Ter Wal – Boschma 2009). However the process of preferential attachment has been often criticized for not providing a sufficient answer for the early phases of network evolution when dominant nodes hardly exist.

Another possible force that might drive network formation could be homophily which is originated from sociology. According to network practitioners homophily refers to tie formation based on similarity between nodes. So nodes will connect not necessarily with the most central node, but with the most similar one in some sense (Ter Wal – Boschma 2009). This similarity could be geographical one (geographical proximity) or any other in connection with the nodes' attributes. In economic geography the term proximity is used to explain this notion (Balland et al. 2013a). Based on the results of the French proximity school Boschma (2005) proposed five proximity dimensions: cognitive proximity that enables communication of actors, organizational proximity means similar structures of decision making, institutional proximity means following a similar set of rules, social proximity means being embedded in similar social context and geographical proximity means co-location. And these concepts are more suitable to explain network formation in economic geography (Boschma – Frenken 2010, Boschma et al. 2014a, Balland et al. 2014b). Thus it could be said that partnering is more probable if the actors speak the same language, share the same knowledge and norms or reside in close proximity to each other since these factors could reduce the risk and the cost of collaboration.

Besides preferential attachment and homophily, triadic closure or transitivity as proposed by Balland et al. (2013a) could be a third mechanism that has an influence on network formation. In a very simple way triadic closure means that partners of partners become partners (Ter Wal – Boschma 2009). Meaning two unconnected nodes that are both connected to a common third node are more likely to become partners.

3. Local knowledge networks behind clusters

What is common in networks is that they display inequalities and they have geography (Maggioni – Uberti 2011). These two characteristics brought the attention of economic geographers to use the methods of network analysis in order to answer primal questions of the field, such as what is behind the spatial concentration of economic activities, firms or innovation. Marshall (1920) introduced the benefits of geographical concentration of firms in specialised industries (here clusters) as positive external economies originating from access to resources, specialised labour pool, favourable industrial atmosphere and knowledge spillovers. In relation to industrial atmosphere, it is often associated that firms operating in clusters are likely to generate a socio-economic environment characterised by dense inter-firm networks. The emergence of successful clusters became increasingly associated with the presence of localised networks that besides helping to lower transaction costs and favouring the diffusion of knowledge also enhances the likelihood of innovation (Iammarino – McCann 2006).

With the help of network analysis it is possible to get a picture about industrial atmosphere and also to catch out knowledge spillovers. In this respect knowledge networks are particular important to capture. Knowledge network could be defined as the network that links firms through the transfer of innovation-related knowledge (Giuliani 2010). Numerous studies have been done in relation to clusters and knowledge networks behind them, focused on the determinants and influential factors of knowledge transfer, learning processes and innovation performance.

Giuliani and Bell (2005) questioned the micro-level determinants of learning and innovation, in a relatively early study using network analysis. They argued that knowledge is not diffused evenly ‘in the air’, but flows within a core group of firms. Social network analysis was applied to explore the overall structure of knowledge network of a wine cluster in Chile and identify different cognitive roles played by cluster firms. Their study focused on absorptive capacity of firms in the cluster defined as their ability to access and absorb external

knowledge. Their final results underpin that knowledge flows within a closed group of firms characterised by advanced absorptive capacity. These technological gatekeepers – as they call them – are firms that have a central position in the knowledge network in terms of knowledge transfer to other local firms (Giuliani – Bell 2005). Boschma and Ter Wal (2007) also highlighted that co-location is not enough in itself for cluster success, rather connectedness may function as key vehicle of knowledge transfer and knowledge diffusion. While studying the footwear cluster of South Italy they also had very interesting findings as strong local knowledge network position of firms impacted positively their innovative performance (Boschma – Ter Wal 2007). Giuliani (2007) also examined the differences existing between the structural properties of knowledge networks and business networks. The findings were that knowledge networks are more selective, less dense and highly uneven compared to business networks. The knowledge-rich linkages increase the likelihood of firms being good performers. The content of the network ties are very important for the economic performance of firms and not networking per se that enhances performance of clusters, but the existence of valuable, knowledge-rich linkages (Giuliani 2010). It indicates that the structure of knowledge-rich networks may affect the quality of regional economic development.

These studies have promising results in relation to central questions of economic geography. Due to the spread of network analysis as a methodology we could better understand what is behind cluster success, local embeddedness, knowledge flow between actors or knowledge spillovers in industrial districts. There are already plenty of studies using network analysis, but most of these applied only a static analytical perspective. Only a few empirical works deal with questions like how these networks change over time or what drives the formation of them. The appearance of dynamic network analysis in economic geography has provided a new tool to answer questions related to the evolution of clusters, knowledge networks or even industries (Maggioni – Uberti 2011, Broekel et al. 2014).

An early work by Giuliani (2013) shows the micro level dynamics underpinning the formation of new knowledge ties among wineries in the wine cluster of Chile. In her analysis she used longitudinal data based on repeated questionnaires in two distant periods of time and the method of stochastic actor-oriented models. She explained structural change and stability of networks by the cohesion effects of reciprocity and transitive closure (or triadic closure). Reciprocity emerges when a firm that has been the recipient of knowledge related advice from another firm, returns (reciprocates) the favour. These two effects increase network cohesion, encourage network growth and capture embeddedness (Giuliani 2013). Main conclusions are that knowledge networks show structural stability over time, but are quite dynamic at the

micro level. Cohesion effects turned out to be key drivers of the formation of many new knowledge ties. This is in line with the literature of regional clusters that describes them as contexts of dense, cohesive and strongly embedded networks.

Balland et al. (2014a) analysed the influence of embeddedness, status and proximity on the evolution of technical (knowledge) and business networks in a toy cluster in Spain. They used primary, retrospective data collection strategy (as requested participants to report information in 2005 and 2010) and the stochastic actor-oriented models to capture the driving forces behind the evolution of knowledge and business networks. Their essential findings are that both network and industrial status drive significantly the formation of business networks. Geographic proximity and cognitive proximity (corresponding to the number of digits two companies share in common in their NACE 4 codes) are significantly important for technical (knowledge) networks. Both structural embeddedness (referred to triadic closure) and social embeddedness (direct observation of social ties) are strong drivers of both the knowledge and business network evolutions.

4. Industrial dynamics and network evolution

The research program of evolutionary economic geography formed around empirical findings of different units of analysis. This line of research is interested in the ways in which the economic landscape is transformed over time (Boschma – Martin 2007). Micro level research focuses on the firm and its routines that are historically formed behavioural patterns of firms that are relatively persistent over time. Meso-level research is concentrated on economic sectors (population of firms) and on networks (relations of firms). Finally, on the macro level the spatial system itself becomes the unit of analysis (Boschma –Frenken 2006). Empirical applications of network analysis appeared in the research program mainly on the meso- and macro-level. On the one hand, the dynamics of industrial change has been linked to the relatedness of firms and industries, which can be viewed as a tie between them. On the other hand, different types of proximity are being combined with dynamic network analysis methodology to track the evolution of heterogeneous nodes, ties and the network structure itself. While some systemic evidence has been gathered in the first case, the second case is still in its formative state. In this section we review empirical research first on industrial dynamics, then on geographically bound economic network evolution.

In the research on industrial dynamics, the main questions are how the relatively stable variety of economic activities, entities and products are affecting the entry and exit decisions

of firms on the short run, and how does variety itself changes due to the entry and exit of firms on a longer time scale. However, as Frenken et al. (2007) argued, it is not variety or specialization of regions *per se* is what matters, but the amount of related variety present. Economic actors, activities or products can be considered related if they are not too close and not too distant in terms of cognitive (technological) proximity, *i.e.* effective communication (learning) can occur between them (Boschma 2005). On a shorter time scale of 4 to 5 years, related variety can be considered relatively stable due to the path-dependent nature of technological change. Empirical evidence shows that the probability of entry increased when firms, technological or scientific knowledge or products were more related to the technological portfolio of regions. The probability of exit was decreased with relatedness to this portfolio. This general pattern was shown for country level export of products (Hidalgo et al. 2007), for the entry and exit of industries in Swedish and Spanish regions (Neffke et al. 2011, Boschma et al. 2012), the appearance of technological classes of patents in U.S. cities (Boschma et al. 2015) and the entry and exit of scientific knowledge (Boschma et al. 2014b).

On a longer timescale related variety itself becomes the dependent variable. As demonstrated by Neffke et al. (2011), a relatively stable amount of related variety concealed significant structural change in the form of a high frequency of entry and exit in the Swedish case. Essletzbichler (2013) also found for the case of U.S. metropolitan areas that technological cohesion was relatively stable with a large amount of turmoil underneath. Following the country level argument of Hidalgo et al. (2007), Frenken and Boschma (2007), Frenken (2009), Boschma and Frenken (2011a) and Boschma and Frenken (2011b) argue that the diversification of the regional economies follows the patterns of technological relatedness, *i.e.* regions diversify into related activities.

Long term evolution of regions based on industry dynamics, network methodology plays a part in the measurement of technological relatedness. While earlier attempts to capture relatedness utilized standard industrial classification of economic activities (*e.g.* Frenken et al. 2007), this method was criticised because it *ex ante* assumes the technological proximity of industries belonging to the same two-digit NACE classification (Neffke – Henning 2008). More advanced approaches rely on the co-occurrence of products (e.g. Neffke et al. 2011) and inter industry labor flows (*e.g.* Boschma et al. 2009) in the ex post establishment of relatedness.

Regarding network dynamics, the main question is how the heterogeneity of nodes, the different dyadic relations and the network structure itself interact and change over time. This sort of research makes use of the newly emerging dynamic network analysis methodology (for

an extensive review see Broekel et al. 2014). Concepts of the aforementioned French proximity school proved useful in this research. Empirical research so far has been focused on specific industries. In the case of the global navigation satellite system industry Vicente et al. (2011), Balland (2012) and Balland et al. (2013b) showed that geographical, organizational and institutional proximity had a positive effect on propensity to collaborate, while the effect of social and cognitive proximity was not significant. In the case of the global video game industry Balland et al. (2013a) found that the role of (1) network endogeneity, stressing the path-dependent nature of change, (2) different forms of proximity, and (3) heterogeneity of firms was significant along the industry life cycle. While the direction of these effects remained the same, their weights changed over the course of the life-cycle. While some case study findings have already been gathered, to our knowledge no systemic evidence has been collected on the dynamic of networks in economic geography. This is partly due to the relative novelty of the methodology involved and partly due to the extreme demand of the method in terms of relational panel data.

5. Conclusions

We have discussed the presence and significance of network analysis in economic geography and emphasized the notability of dynamic network approaches in the field. After the general review of network analysis as a method and its expectations for economic geography, we focused on the growing literature of local knowledge networks behind clusters, industrial dynamics and network evolution in particular. We overviewed some of the most important empirical findings based on network analysis and argued that the incorporation of a dynamic network approach in economic geography seems to be a promising new line of research for the future.

For future research implications, dynamic network analysis could have great potential in many aspects. It could help understanding the role of different local networks in regional development. Since local development is determined by hub positions in key knowledge networks (Broekel et al. 2014), analysing endogenous regional development from a knowledge network perspective seems to be a major challenge for future research. In the context of industrial change, along timeframes of more than 15-20 years, the technological proximity of industries itself can change, which process should be incorporated in future research. A more pronounced use of network analysis tools could also benefit this line of

research. Inclusion of network properties – like centrality or modularity – on their own right into regression models explaining regional economic performance is still underutilized.

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5. The Perceptual Barriers of Academics' Patenting Intention in Hungary

Sándor Huszár

The patenting activity of universities has gained an increasing attention in the recent decades. Patenting can foster economic development and facilitates to acquire financial resources from commercialization; however this activity still remained at lower level at universities in Hungary. While academics play an essential role in the patenting process, only a few studies investigated the factors affecting their patenting intention. Therefore we put our research focus on the individual scientists in order to get a better understanding of the main influencing factors that can motivate or hinder academics' patenting intention.

In our study we adopted Theory of Planned Behavior (TPB) to investigate the importance of TPB factors and potential perceptual barriers relating to patenting intention. In the TPB model only attitude and social norms towards patenting had relationship with patenting intention while the perceived behavioral control did not. Despite of the small rate of scientists planning to patent, a high proportion of scientists are tend to patent if they got possession of patentable research results. Surprisingly, academics perceive less encouragement to patent from university management than from peers, family members and friends. Building on a qualitative study conducted in 2014 we tested potential perceptual barriers of patenting, but only the preference towards patenting against publication plays important role in the patenting intention.

Keywords: university, patenting, TPB model, barriers, academics

1. Introduction

Patents are one of the well-known forms of intellectual property which play an essential role in the economic development. On one hand the scientists are entitled to be designated as an inventor and on the other hand assignees are granted to the exclusive rights for the commercialization of the intellectual property. Although a general increase in university patenting activity took place after the Bayh-Dole Act in the United States (Shane 2004a) and in Europe as well (Geuna – Rossi 2011), the significance of patents remained lower in the university-industry context. In order to broaden our knowledge in university patenting an increasing number (but still a few) of studies has investigated motivations and obstacles of patenting. Potential personal earnings from patenting activity have found to be important in scientists' motivation (D'Este – Perkmann 2011, Lach – Schankerman 2008, Nilsson et al. 2010), but there are opposite evidences as well (Baldini 2007). Lam (2011) found personal economic incentives important only in a small proportion of scientists.

Another motivational factor can be the prestige and reputational gain which play important role in the patenting activity (Baldini 2007; Lam 2011). Furthermore, Baldini (2007) found that scientists are also motivated in patenting if they can access resource for further research activities.

In contrary to the motivations there are obstacles which can pull back scientists from patenting. Davis et al. (2011) found that a significant proportion of scientists are skeptical about the positive effects of patenting activity. These results raise a question how to motivate scientists to engage in patenting if they perceive more disadvantages than benefits. In a comparison of the most common knowledge transfer channels, both academics and industrial actors perceive patents as a less important knowledge transfer channel (Agrawal – Henderson 2002, Cohen et al. 2002), but little is known about the disadvantages. The effect of patenting activity on knowledge sharing varies by scientific fields, but in some cases too much patenting can divert scientists from other knowledge transfer channels (Crespi et al. 2011). Furthermore, licensing patents do not substitute the personal (face-to-face) contact and do not accompany with the transfer of tacit knowledge for successful knowledge transfer (Schartinger et al. 2002), however the importance of scientists' tacit knowledge and attitudes in the commercialization process is high (Wu et al. 2015, Shane 2004b). Universities can foster the patenting activity, e.g. establishing university regulations which may reduce the obstacles or express commitment for patenting (Baldini 2007), but at the same time D'Este and Perkmann (2011) emphasize that university regulations should consider other factors than focusing only on financial incentives.

Despite of the increasing attention of the topic there is a lack of studies investigating scientists' patenting intention in Hungary. We should broaden our scope to entrepreneurship to find any results of recent studies. Novonty (2013) revealed that the time spent on applied research and development, the entrepreneurial spirit of the department and the industrial relations play important role in scientists' involvement in technology transfer. These factors can have impact on patenting as well. In another study focusing on obstacles of spin-off creation Buzás (2004) concluded that the lack of motivation, the lack of competence and the lack of confidence from industrial partners reduce the scientists' entrepreneurial intentions. However spin-off creation and patenting are different form of research commercialization, the results of previous studies can contribute to the better understanding of drawbacks in Hungary.

As previous studies revealed, there are benefits and disadvantages of patenting (or any form of commercializing research results) which can highly influence scientists' decision.

Therefore we put our research focus on academics that play important role in the patenting process. Even at those universities, where patenting activity and technology transfer mechanisms are more developed (like MIT), patent disclosure usually happens only if the scientist want to patent his research results (Shane 2004).

2. Theoretical framing

We adopt Theory of Planned Behavior (TPB model) to determine influencing factors of patenting which has been extended the scope with the potential perceptual barriers. In our model we suppose that the influencing factors of the TPB model and the potential perceptual barriers can stimulate or pull back scientists from patenting.

2.1. Theory of Planned Behavior

The Theory of Planned Behavior is widely used as a theoretical framework for predicting intentions in psychology and also in the commercialization of university scientific results, mainly in entrepreneurship (Goethner et al. 2012, Kautonen et al. 2011, Krueger − Carsrud 1993, Küttim et al. 2014, Yurtkoru et al. 2014). The theory supposes that the intention towards certain behavior (intention) is affected by the attitudes, social norms and perceived behavioral control related to the given behavior.

The model also measures the linkage between the intention and the behavior[3] as well (Ajzen 1991). The theory allows researchers to measure the relationships and to determine the most influential factors within the model.

The theory has gained an increasing attention in the commercialization of university research results, but the above mentioned studies were focusing rather on entrepreneurial intentions. On the contrary, we brought in focus patenting intentions.

[3] In our study we do not investigate the relationship between patenting intention and patenting (as behavior) because we did not conduct research on behavior due to the time constraints. According to the theory, we should carry out a second survey on the behavior which investigate whether the intention transformed or not into behavior. Due to the long time length of patenting, we should wait for at least 1 year between the two surveys. Thus, in our study suppose that patenting intention triggers behavior.

2.2. Potential perceptual barriers

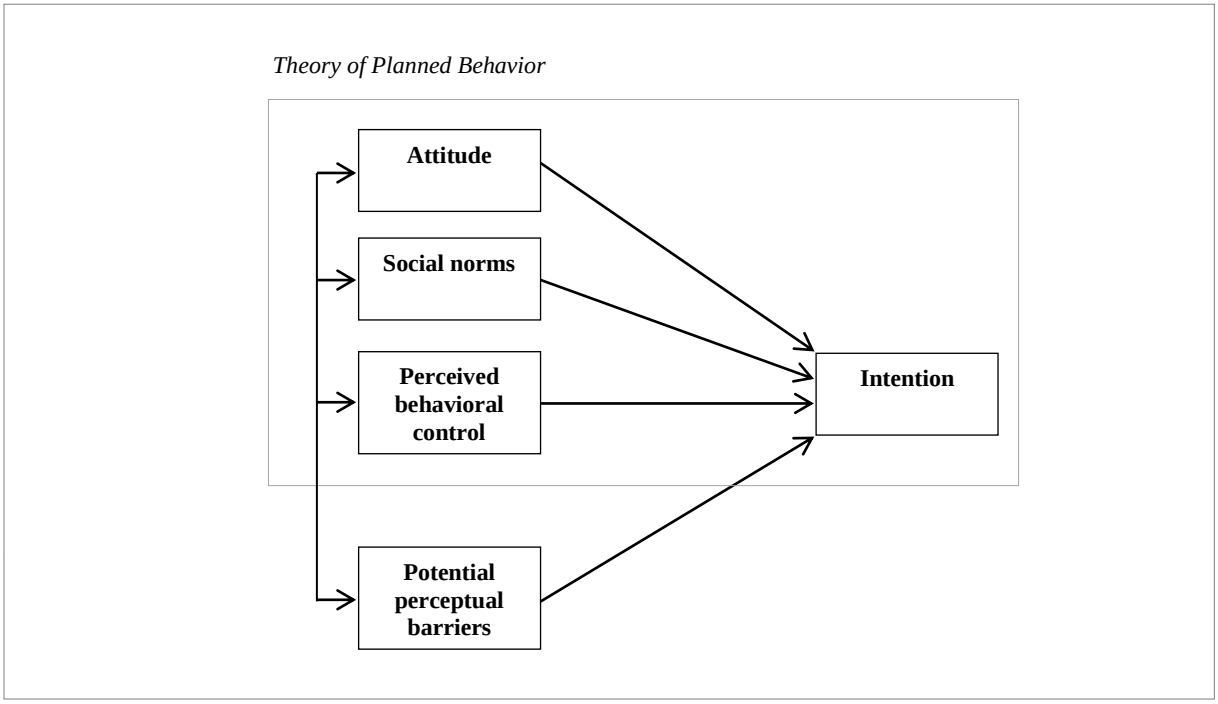
The above mentioned recent studies have revealed some hindering factors which may keep researchers away from patenting activity. In 2014, we carried out 21 semi-structured individual interviews[4] at scientifically respected universities in Hungary in order to better understand scientists' attitudes towards patenting and highlight contextual characteristics of patents between the university and industry. This study allowed us to investigate the role of potential hindering factors determined by other studies, and implement them into the Hungarian context (Huszár et al. 2014). In this research academics stated that (1) commercialization activity of university patents usually does not overweight the expenditures of patenting which raise a fundamental question from the economic point of view. A significant proportion of researchers claimed that, (2) most of the university patents do not provide appropriate solution for potential industrial partners, because real industrial needs are usually not taken into consideration during the research projects or cannot be recognized by the academics. (3) The characteristics of patenting differ from the norms of open science, while engaging in patenting can cause role identity modification problems among academics which is consistent with Jain et al. (2009). (4) Although the available EU and state funded programs fostering technology transfer activities increased the academic patenting activity but also had negative effect on the perception of university patents. Finally, our results also pointed out that (5) scientists' involvement in the commercialization of patents is necessary which emphasizes the importance of scientists' tacit knowledge gained during the development of invention.

2.3. Building a conceptual model

Following Ajzen's (1991) presumptions, attitudes, social norms and perceived behavioral control influence scientists' patenting intention. We extend this model with potential perceptual barriers determined by recent studies (Figure 1). We suppose that, these factors can pull back scientists from patenting. This model allows us to test the reliability of Ajzen's model in patenting intention and investigate the potential barriers.

[4] The results of 14 individual interviews were presented in a conference in Barcelona. In order to gain more experience the study was extended with 7 academics to 21.

Figure 1 Conceptual model



Source: own construction

The present study was carried out among academics at four universities in Hungary in order to determine the potential barriers of university patenting[5].

3.1. Measurement

In the theory of planned behavior we measured attitudes[6], social norms, perceived behavioral control and intention with 5-point-likert scales ranged from -2: „not agree at all" to 2: „fully agree", where respondents had to mark whether they agree or not with the statements. The variables were created based on a Guide Book focusing on building questionnaire for TPB models[7] and from the results of our qualitative study (Huszár et al. 2014).

Regarding the potential perceptual barriers, we let researchers to decide whether the given statement has positive or negative direction. We measured these statements also with 5-

[5] The pilot study allows us to test our presumptions and determine unforeseen errors before extending the survey to other Hungarian universities.

[6] Attitudes were measured by 3 statements, which were focused on the 3 components of attitude (affective component, behavioral component and cognitive component).

[7] See Francis, J. J. – Eccles, M. P. – Johnston, M. – Walker, A. – Grimshaw, J. – Foy, R. – Kaner, E. F. S. – Smith, L. – Bonetti, D. (2004): *Constructing questionnaires based on the Theory of Planned Behaviour.* Centre for Health Services Research, University of Newcastle.

point-likert scales ranged from -2 to 2, but with different endings of the statements at the endpoints (e.g. „Patenting is ..., than publication." The two endpoints of the scale: more important and less important). The variables were constructed based on our qualitative study (Huszár et al. 2014).

3.2. Hypotheses

During the pilot study we test two hypotheses related to the patenting intention of academics. Taking the psychological assumptions of Ajzen (1991), we suppose that attitudes, social norms and perceived behavioral control play important role in the patenting intention.
Hypothesis 1: Attitudes, social norms and perceived behavioral control towards patenting play important role in the patenting intention.

Based on the results of previous studies and our qualitative research we investigate the relationship of potential perceptual barriers and patenting intention. We suppose that the potential perceptual barriers can pull back scientists from patenting.
Hypothesis 2: The potential perceptual barriers play important role in scientists' patenting intention.

3.3. The sample

The e-mail addresses of academics were collected from the relevant departments' websites. Two principals were taken into consideration during the data collection process. Firstly, the scientific field represented at the department must be relevant to patenting[8] which means that the departments were distinguished whether the scientific field represented at the department are relevant to patenting (e.g. chemistry, engineering, biology, etc.) or not (e.g. literature, history, etc.). Secondly, the personnel listed on the websites must be relevant to research activity[9], others were excluded (e.g. assistants, technical staff, administrators, etc.). Finally, 3.993 relevant e-mail addresses have been collected. Due to time constraints we could receive responses between 26 February 2015 – 20 April 2015. During this period 154

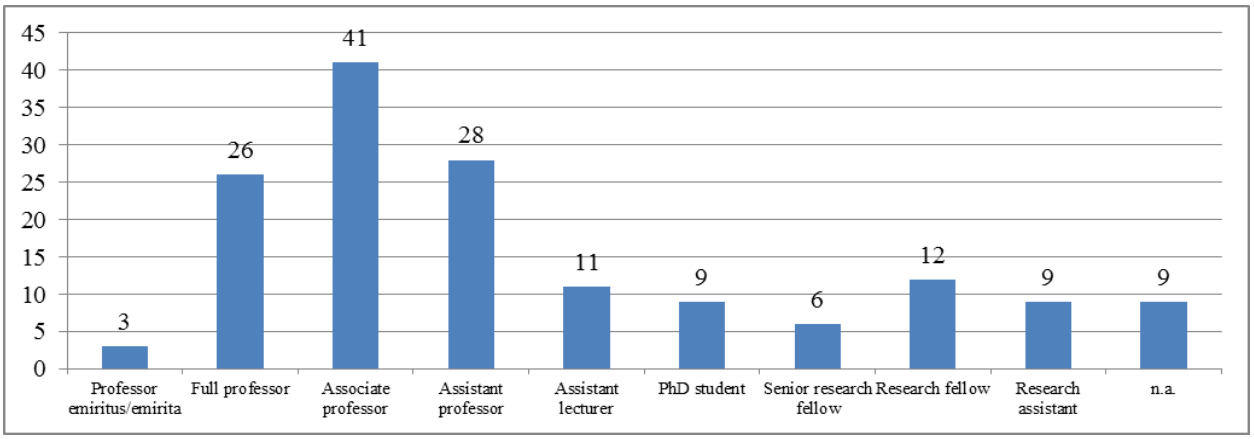
[8] There are scientific fields which support patenting activity, but some scientific fields do not allow patenting due to the strict criteria of intellectual properties. Therefore only those departments are represented in this study which is related to engineering, natural sciences and life sciences.

[9] We have sent our questionnaire only to those academics, who held one of the following positions: full professor, associate professor, assistant professor, assistant lecturer, PhD student; or who held research related position (e.g. research fellow or head of research) according to the website.

respondents took part in the survey (response rate: 3.86%). The data was collected by the EVASYS web-based survey system.

About one-fourth of the researchers are associate professors in our sample and the share of full professors and assistant professors are also notable (Figure 2). These three groups represent the two-third of the respondents.

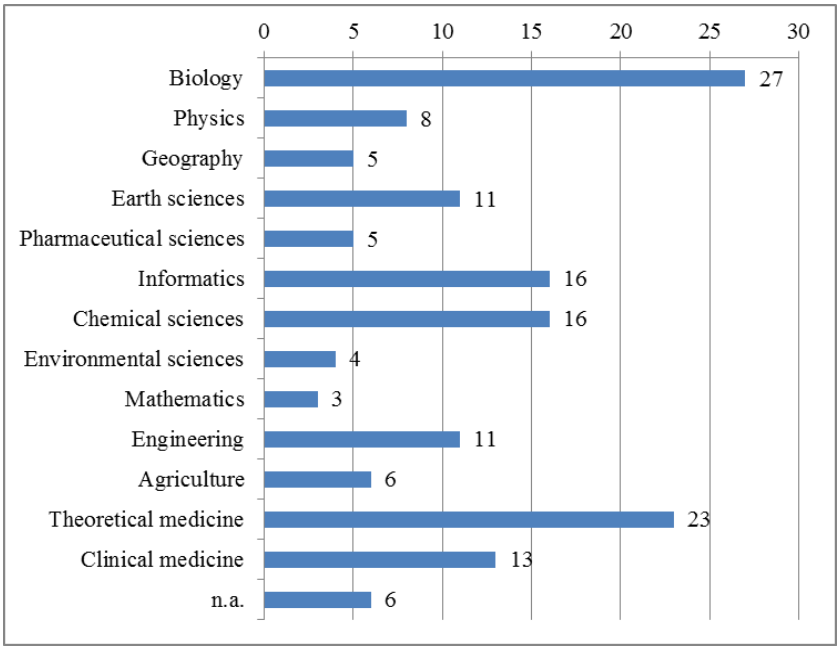
Figure 2 Positions held by the researchers



Source: own construction

Regarding the represented disciplines, researchers relating to biology, medicine (theoretical and clinical), informatics and chemical sciences dominate in the sample (Figure 3). These 5 of 13 scientific disciplines represent the 62% of the sample.

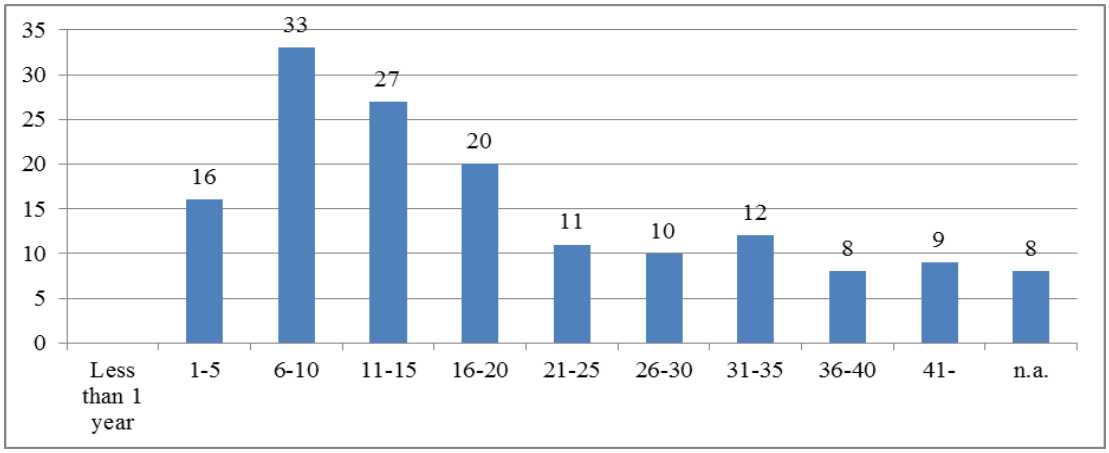
Figure 3 Represented disciplines



Source: own construction

One-third of the respondents have spent more than 20 years in research activity, one-third of them have spent 11-20 years and the rest deals with research activity for less than 10 years. From this point of view our sample consists of researchers with significant research experiences (Figure 4).

Figure 4 Scientists' experience in research activity (in years)



Source: own construction

In our sample only 22 researchers (14,3%) stated that he possess at least one patent that have been already successfully commercialized, while 27 researchers have already patented, but those patents were not commercialized yet (Table 1). Furthermore, two-third of the scientists have never patented any research result.

Table 1 Patenting activity of researchers

	Never commercialized patents	**Successfully commercialized at least one patent**	**Total**
Never patented	104	-	104
Already patented	27	22	49
Total	131	22	153

Note: 1 respondent did not give answer
Source: own construction

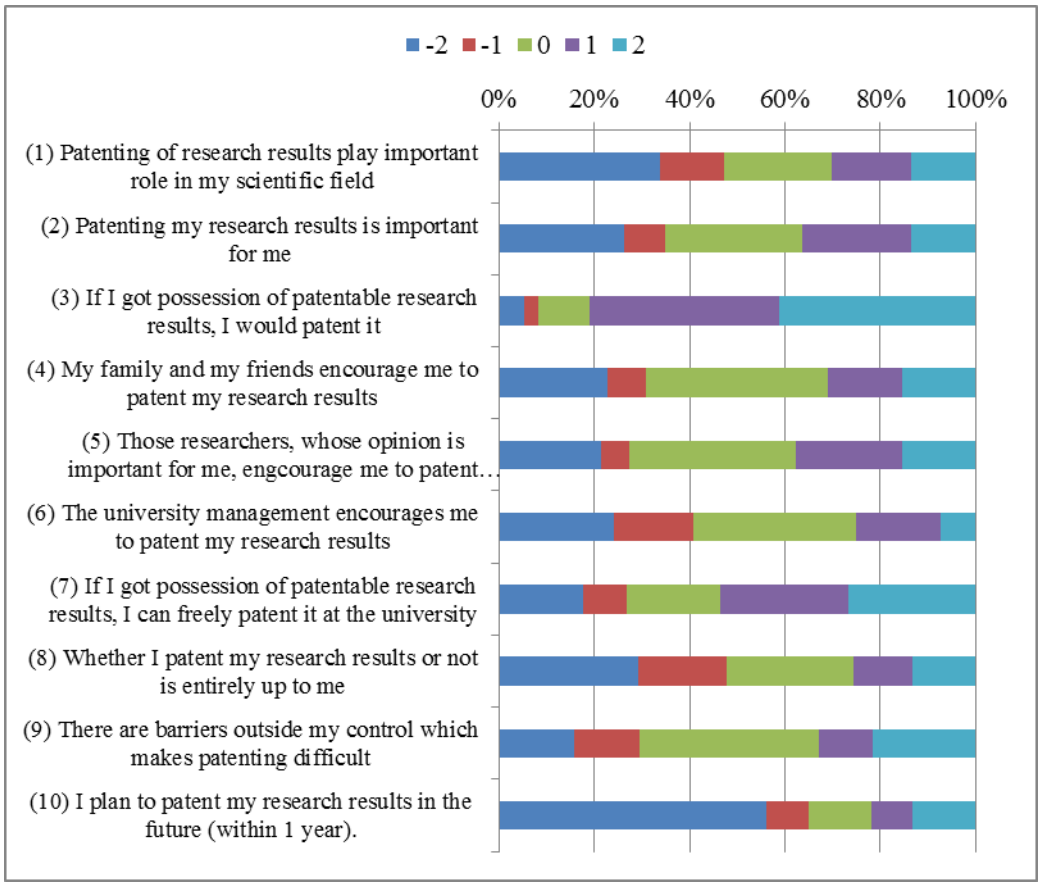
4. Research results

In this section we demonstrate the results of our survey conducted at four Hungarian universities. Firstly, we summarize the general opinion of researchers about patenting and issues relating to patenting activity. Secondly, we investigate the relationship of patenting intention with the TPB factors and potential perceptual barriers.

4.1. Descriptive statistics

In our model, the attitude [(1), (2), (3)], social norms [(4), (5), (6)] and perceived behavioral control [(7), (8), (9)[10]] were measured with 3-3 different variables (Figure 5). Regarding the attitude, we wanted to investigate the general opinion of researchers relating to patenting activity which consists of the affective, behavioral and cognitive components of attitude. The variables of social norms focused on the influence of family members, friends, peers and the university management, because scientists may perceive differently their encouragement. Furthermore we collected answers about how much control the researchers perceive over patenting scientific results at universities. Finally, we measure patenting intention in our model with the following statement: (10) „I plan to patent my research results in the future (within 1 year)". This statement plays a central role in this model, because we investigate the relationships of all variables with the patenting intention.

Figure 5 Distribution of answers relating to the TPB model



Source: own construction

[10] This item has a negative endpoint, thus the values were computed into a reverse order in the analysis.

According to the researchers, about one-third of the respondents stated that patenting is important in his scientific field (30%) and patenting is important for him (37%). However a significant proportion of scientists (81%) are tend to patent his research results if they got possession of patentable research results. While patenting of research results is not important for all researchers in general, they expressed a quite positive opinion in case of getting possession of patentable results. Regarding the social norms, about one-third of the researchers receive encouragement from family, friends (31%) and peers (38%), while only one-fourth (25%) of the researchers perceive any encouragement from university management. We can suggest that, family and close friends could play more important role in the decision of patenting or not, than the university management. While about half of the researchers (53%) think that, they can freely patent research results at the university, only 26% of the respondents perceive the control about the process. Despite of the general positive attitude relating to the willingness to patent research results, if the researchers got possession of it, only 22% of the researchers plan to patent research results within 1 year.

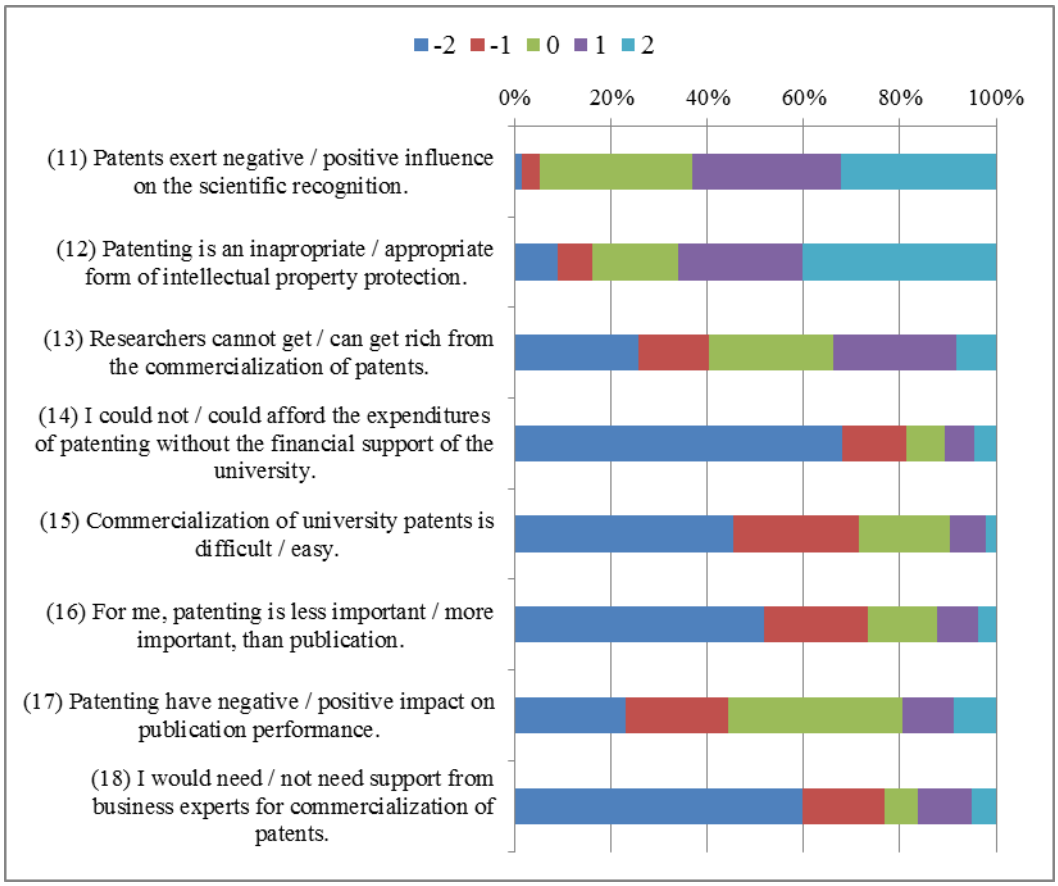
Summarizing the results, we can conclude that, about one-third of the researchers expressed positive attitude towards patenting research results, but 81% of them are tend to patent their research results. Despite of this positive attitude, only 22% of them plan to patent within 1 year, that could be explained by ineffective encouragement or most of the research results are not patentable according to the respondents.

In previous year 21 semi-structured individual interviews have been conducted in Hungary in order to investigate the potential incentives and barriers of patenting. During the qualitative research we determined some factors that could influence patenting intention. To let researchers to decide whether the investigated factors have a positive or negative direction, the endpoints of the Likert scales represented positive and negative opinions as semantic differential scales (Figure 6).

Although two-third of the researchers believe that patents exert positive influence on their scientific recognition (63%) and patenting is an appropriate form of intellectual property protection (66%), the results of other variables suggest presume difficulties relating to patenting and its successful commercialization. 40% of the researchers do not believe that commercialization of patents can yield significant personal income. About four-fifth of the respondents would need support (financial (81%) and business expertise (77%)) from the university to patent research results while only 9% of them believe that commercialization of university patents is easy. A small proportion of scientists (12%) consider patents more

important than publication, and about half of them (44%) associate patenting with negative influence on their publication performance.

Figure 6 Distribution of answers relating to potential perceptual barriers



Source: own construction

The results suggest that the large proportion of researchers expressed negative opinion about patenting and its impact on publication. Although the researchers are tend to patent research results (as we have seen previously), neither the appropriate business expertise nor the necessary financial resources are available without the support of the university.

4.2. Relationships within the model

In the previous section we have seen the distribution of answers, now our aim is to investigate the relationship of patenting intention with TPB factors and potential perceptual barriers. Following the presumptions of the Theory of Planned Behavior, we will also test the internal consistency of the predefined constructs.

As Appendix 2 shows that all variables of the attitude factor [(1), (2), (3)] have significant relationship with the patenting intention. Among these variables, those researchers are tending to patent, who consider patenting important. Regarding the social norms factor, all groups play important role in encouragement, but university management (6) has less significant relationship with patenting intention, than family and friends (4) and peers (5). While the variables of previous factors have been proven important in this model, the items of perceived behavioral control [(7), (8), (9)] seems insignificant in this context.

We further our investigation and attempt to create the constructs predefined by the Theory of Planned Behavior. According to the reliability statistics attitude (Cronbach's alpha: 0,755), social norms (Cronbach's alpha: 0,779) and perceived behavioral control (Cronbach's alpha: 0,599) can be created from the variables as we supposed earlier. While the attitude (Pearson correlation: 0,558**) and social norms (Pearson correlation: 0,472**) factors are still playing important role in patenting intention, the perceived behavioral control (Pearson correlation: -0,031) does not (Table 2). This result is assumable, because none of those items [(7), (8), (9)] had significant relationship with the patenting intention.

Table 2 Correlations

		Attitude	Social norms	Perceived behavioral control	I plan to patent my research results in the future (within 1 year).
Attitude	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	121			
Social norms	Pearson Correlation	,661**	1		
	Sig. (2-tailed)	,000			
	N	98	104		
Perceived behavioral control	Pearson Correlation	,164	,322**	1	
	Sig. (2-tailed)	,157	,006		
	N	76	72	79	
I plan to patent my research results in the future (within 1 year).	Pearson Correlation	,558**	,472**	-,031	1
	Sig. (2-tailed)	,000	,000	,793	
	N	105	94	73	114

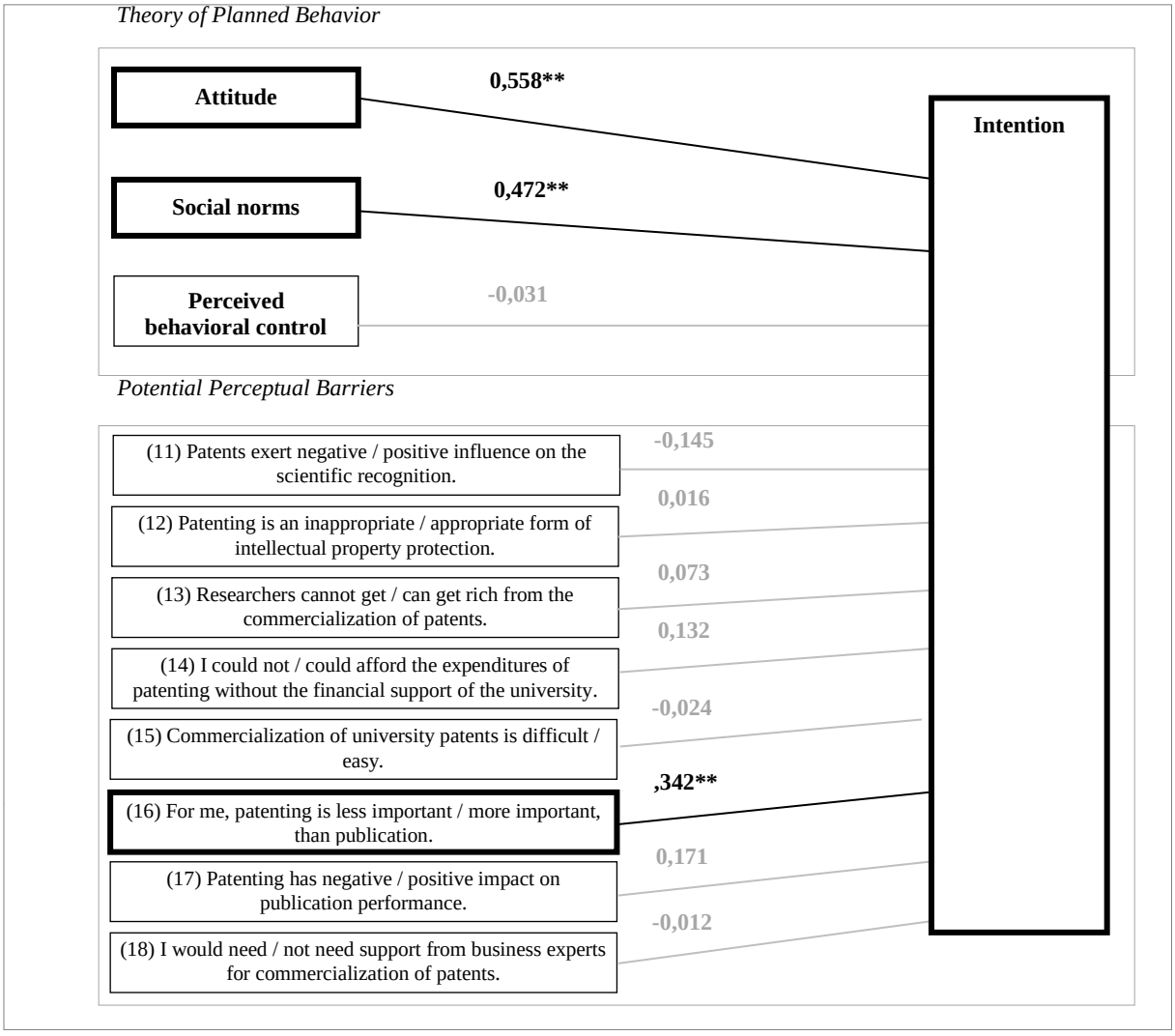
**. Correlation is significant at the 0.01 level (2-tailed).

Source: own calculation

We investigated the relationships among the potential perceptual barriers and the patenting intention as well (Figure 7). Unfortunately none of the variables have been proven significant in our model except only one (16). According to the results we can suppose that only those researchers plan to patent their scientific results, who consider patenting more important than publication. These results raise the question of why the other variables do not prove our presumptions. Regarding the effects of patenting on scientific recognition (11) and publication performance (17) may be perceived differently among academics and these beliefs

are not crucial in this context. Whether patenting is an appropriate or inappropriate form of intellectual property (12), it can differ by disciplines but this variable does not seem to be a fundamental factor. There are researchers who do not patent, but think commercialization of patent can provide significant personal income, and vice versa (13). This somehow relating to the motivations as well, so we cannot say that expected financial gain (getting rich) motivate scientists in patenting, there should be other motivations. In addition neither the financial background (14) nor the business expertise (18) possessed by the researcher has significant relationship with patenting intention. Finally, the researchers also not consider the difficulty of commercializing university patents (15) in patenting decision. We can assume that there should be other factors influencing researchers in patenting, because most of the variables specified during our qualitative study have not been proven determining in this quantitative survey.

Figure 7 Model of the patenting intentions



Source: own calculation

5. Conclusions

We conducted this survey to determine the influencing factors of patenting intention. Building on Ajzen's (1991) theory, we can conclude that the most important factors of patenting are the patenting attitude and social norms. These factors have the strongest relationship with patenting intention[11]. In this study peers encouragement has been proven important in patenting intention. This result is also supported by Novotny (2013) who found relationship between the entrepreneurial spirit of the department and technology transfer activity. Other studies found university's role determining in patenting (Baldini 2007) which is supported by our study as well, but in our model the role of university is lower than the other groups. Regarding the third factor of the TPB model, the perceived behavioral control did not have relationship with the patenting intention. This result can be explained by that researchers are usually not aware of that in what conditions they can patent their scientific results. This can vary among academics because some of them think that patenting decision is entirely up to the inventor. But this is partly true, at most universities technology transfer offices (or similar subunits with same functions) make final decision after disclosure whether to patent or not. This can be confusing and probably not all of the respondents were aware of the regulations.

In our survey we investigated potential perceptual barriers which could determine in patenting intention. Firstly, we assumed that if the patenting activity has positive impact on scientific activity (scientific recognition, publication performance), the scientists are tend to patent their research results. It also means that researchers could gain reputational rewards through patenting which is consistent with recent studies (Baldini 2007; Lam 2011), but negative impact of patenting could pull back scientists if scientific career progress play more important role in their motivation. Secondly, the easier the commercialization of university patents and getting rich, the higher the propensity of patenting intention. In this case the higher commercial potential of university patents can trigger academics' motivation to patent. The relevance of the commercial potential has gained attention in the science to business marketing as well (Prónay − Buzás 2013). However the academics do not believe in commercial potential of patents, they can have less motivation in patenting according to recent studies on faculty motivation (D'Este – Perkmann 2011, Lach – Schankerman 2008, Nilsson et al. 2010). Finally, we assumed that researcher's capability (including financial and

[11] Due to the time constraints, unfortunately we could not conduct the survey on the behavior. In this study we suppose the strong relationship between the intention and behavior.

business expertise) can influence patenting activity positively. In parallel, Buzás (2004) also found the lack of competence as a barrier for entrepreneurship in Hungary. Despite of the results of previous studies, we did not find significant relationship of the above mentioned potential perceptual barriers with patenting intention.

In this study we did not investigated control variables, but the academics' beliefs may differ by positions, institutions and/or disciplines. We should also investigate the effect of patenting experience, because those scientists who have already gained experience, they may have different opinion, moreover the inventors of successfully commercialized patents evaluate differently patenting as those inventors whose patents were not attractive to industrial partners. These possibly explanations are still presumptions; we still have to investigate their effect in more detail.

Acknowledgement

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Appendix 1 Frequencies of answers

	-2	-1	0	1	2	N (valid)	Missing
Items of Theory of Planned Behavior							
Patenting of research results play important role in my scientific field.	45	18	30	22	18	133	21
Patenting my research results is important for me.	33	11	36	29	17	126	28
If I got possession of patentable research results, I would patent it.	7	4	14	52	54	131	23
My family and my friends encourage me to patent my research results.	25	9	42	17	17	110	44
Those researchers, whose opinion is important for me, engcourage me to patent my research results.	25	7	41	26	18	117	37
The university management encourages me to patent my research results.	29	20	41	21	9	120	34
If I got possession of patentable research results, I can freely patent it at the university.	18	9	20	27	27	101	53
Whether I patent my research results or not is entirely up to me.	33	21	30	14	15	113	41
There are barriers outside my control which makes patenting difficult.	14	12	33	10	19	88	66
I plan to patent my research results in the future (within 1 year).	64	10	15	10	15	114	40
Potential perceptual barriers							
Patents exert *negative* / *positive* influence on the scientific recognition.	2	5	42	41	43	133	21
Patenting is an *inappropriate* / *appropriate* form of intellectual property protection.	11	9	22	32	50	124	30
Researchers *cannot get* / *can get* rich from the commercialization of patents.	28	16	28	28	9	109	45
I *could not* / *could* afford the expenditures of patenting without the financial support of the university.	77	15	9	7	5	113	41
Commercialization of university patents is *difficult* / *easy*.	43	25	18	7	2	95	59
For me, patenting is *less important* / *more important*, than publication.	68	28	19	11	5	131	23
Patenting have *negative* / *positive* impact on publication performance.	26	24	41	12	10	113	41
I would *need* / *not need* support from business experts for commercialization of patents.	70	20	8	13	6	117	37

Source: own construction

Appendix 2 Correlations in the TPB model

		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10) Patenting intention
(01) Patenting of research results play important role in my scientific field.	Pearson Correlation	1									
	Sig. (2-tailed)										
	N	133									
(02) Patenting my research results is important for me.	Pearson Correlation	,741**	1								
	Sig. (2-tailed)	,000									
	N	124	126								
(03) If I got possession of patentable research results, I would patent it.	Pearson Correlation	,338**	,424**	1							
	Sig. (2-tailed)	,000	,000								
	N	129	122	131							
(04) My family and my friends encourage me to patent my research results.	Pearson Correlation	,438**	,561**	,492**	1						
	Sig. (2-tailed)	,000	,000	,000							
	N	108	106	109	110						
(05) Those researchers, whose opinion is important for me, engcourage me to patent my research results.	Pearson Correlation	,438**	,585**	,406**	,796**	1					
	Sig. (2-tailed)	,000	,000	,000	,000						
	N	114	112	115	108	117					
(06) The university management encourages me to patent my research results.	Pearson Correlation	,381**	,319**	,223*	,306**	,481**	1				
	Sig. (2-tailed)	,000	,001	,015	,001	,000					
	N	117	113	118	105	113	120				
(07) If I got possession of patentable research results, I can freely patent it at the university.	Pearson Correlation	,236*	,248*	,308**	,147	,315**	,654**	1			
	Sig. (2-tailed)	,019	,015	,002	,167	,002	,000				
	N	98	96	100	90	95	98	101			
(08) Whether I patent my research results or not is entirely up to me.	Pearson Correlation	,053	-,030	-,152	-,116	-,116	,098	,272**	1		
	Sig. (2-tailed)	,585	,755	,114	,251	,233	,316	,007			
	N	110	109	110	99	107	107	96	113		
(09) There are barriers outside my control which makes patenting difficult.	Pearson Correlation	-,051	-,010	-,052	,033	,113	,249*	,298**	,343**	1	
	Sig. (2-tailed)	,640	,929	,634	,774	,309	,022	,008	,001		
	N	86	86	85	80	83	84	79	87	88	
(10) Patenting intention (I plan to patent my research results in the future (within 1 year).)	Pearson Correlation	,475**	,581**	,321**	,477**	,417**	,206*	,079	-,094	-,099	1
	Sig. (2-tailed)	,000	,000	,001	,000	,000	,034	,458	,349	,384	
	N	111	108	111	98	104	106	90	102	80	114

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Source: own calculation

Appendix 3 Correlations among the perceptual barriers

		(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(10) Patenting intention
(11) Patents exert ***negative*** / ***positive*** influence on the scientific recognition.	Pearson Correlation	1								
	Sig. (2-tailed)									
	N	133								
(12) Patenting is an ***inapropriate*** / ***appropriate*** form of intellectual property protection.	Pearson Correlation	,284**	1							
	Sig. (2-tailed)	,002								
	N	118	124							
(13) Researchers ***cannot get*** / ***can get*** rich from the commercialization of patents.	Pearson Correlation	,173	,285**	1						
	Sig. (2-tailed)	,075	,004							
	N	107	103	109						
(14) I ***could not*** / ***could*** afford the expenditures of patenting without the financial support of the university.	Pearson Correlation	-,015	,034	,318**	1					
	Sig. (2-tailed)	,875	,731	,001						
	N	109	103	98	113					
(15) Commercialization of university patents is ***difficult*** / ***easy***.	Pearson Correlation	,179	,214*	,497**	,494**	1				
	Sig. (2-tailed)	,085	,044	,000	,000					
	N	94	89	89	90	95				
(16) For me, patenting is ***less important*** / ***more important***, than publication.	Pearson Correlation	,098	,104	,266**	,173	,217*	1			
	Sig. (2-tailed)	,278	,264	,006	,069	,038				
	N	125	118	105	111	92	131			
(17) Patenting have ***negative*** / ***positive*** impact on publication performance.	Pearson Correlation	,313**	,249*	,081	,071	,177	,418**	1		
	Sig. (2-tailed)	,001	,011	,429	,480	,100	,000			
	N	111	104	98	100	87	110	113		
(18) I would ***need*** / ***not need*** support from business experts for commercialization of patents.	Pearson Correlation	,105	,105	,086	,250**	,286**	,114	,139	1	
	Sig. (2-tailed)	,269	,286	,397	,010	,007	,229	,164		
	N	113	106	100	105	89	114	102	117	
(10) Patenting intention (I plan to patent my research results in the future (within 1 year))	Pearson Correlation	-,145	,016	,073	,132	-,024	,342**	,171	-,012	1
	Sig. (2-tailed)	,132	,878	,490	,202	,831	,000	,100	,910	
	N	109	99	91	95	81	106	94	97	114

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: own calculation.

PART TWO

Social and Environmental Issues in Marketing and Management

Hetesi E. – Vas Zs. (eds) 2015: *New Ideas in a Changing World of Business Management and Marketing*. University of Szeged, Doctoral School in Economics, Szeged, pp. 91-99.

6. Company Support for Employee Volunteering

Andrea Csovcsics

Corporate Social Responsibility (CSR) is widely accepted today. The repertoire of methods, instruments and rules of corporate social responsibility is rapidly expanding. In its focus are internal and external stakeholders on the one hand, and the intention of increasing the quality of society and enhancing welfare in a sustainable way on the other. The goal of long term survival and operation is no longer just sheer profit but also social and environmental sustainability, that is, the harmony created between the firm and its environment, which has become equally important. These days corporate social responsibility as a trend is spreading rapidly, and so is Company Support for Employee Volunteering (CSEV), which is an initiative of CSR.

The number of companies where company support for employee volunteering is an organic part of the company strategy is increasing. Employers support their employees' efforts to get involved in voluntarism in countless different ways. Employers have an interest in supporting employee volunteering most of all because in this way they can guarantee and enhance the legitimacy of the company's structure, work process and mission. If employees reinforce the company's corporate social message and goal, and that these have infiltrated into the firm's values, corporate and operative culture, they will contribute to strengthening the whole legitimacy of the corporation. It is the company's goal to reinforce its external and internal legitimacy by corporate social activities, for example CSEV. The company sets goals which are accepted by society, and in realizing these goals it uses tools which are accepted by society too - this is the key of successful company performance.

The following review tries to outline what kind of motivations companies have for CSR activities, including CSEV programs, and what the reasons are. In addition, it would like to show the different kinds of benefits of these activities. Based on Porter and Kramer's work, it emphasizes the strategic and responsible applications of CSEV, as the best solution is the integration of social aims and business priorities.

Keywords: Corporate Social Responsibility (CSR), Company Support for Employee Volunteering (CSEV), Volunteering

1. Introduction

This short study investigates a quite recent corporate social responsibility initiative, namely Company Support for Employee Volunteering (CSEV). Company support for employee volunteering, also called employee voluntary program (EVP) or workplace volunteer program (WVP), is one component of the company's corporate social responsibility (CSR) activities which involves the firm's participation in societal causes. Companies whose objectives include

long-term continuance, are rethinking their role in the society and their relationships with employees and other members of the society. We can declare that CSR is slowly emerging as a fundamental cultural characteristic of companies. People who are hunting for jobs and customers are looking for firms to make a favourable impact on the world as well as to make a profit. According to Roy (2010), when a company is interested in CSR activities then this fact could bring about positive reaction from consumers. Many research demonstrate that there is a positive relationship between CSR activity and company success (Basil et al. 2008).

On the other hand, it must be acknowledged that there exist a growing scepticism towards CSR theories and activities among customers. This kind of uncertainty in the customers might arise from some other more common phenomena such as greenwashing or exploitation (Mattila-Hanks 2013). Critics may also see some other CSR efforts as attempts at public manipulation (Broomhill 2007). Several researchers provide a powerful critique of CSR. They argue that the CSR activities can manage some of the worst symptoms of maldevelopment, such as poor working conditions, pollution, and poor community relations, but that it does not deal with the key political and economic issues (Utting 2005). According to the critics, the CSR could be misleading because in many cases companies attempt to shape public perception about themselves without their actually having to benefit the environment and society (Broomhill 2007).

Research on people's perceptions and opinions of corporate sponsored volunteering programs is available in limited quantities but according to its results, we need to talk about the popularity of this form of CSR. The trend in corporate social responsibility towards the 'doing better by doing good' approach has provided new opportunities for volunteering. As a result, we can welcome employee voluntary programs among us.

Investigation of corporate volunteering is an interesting field because it could be examined from more and more aspects as individual volunteering. Motivation is one of the relevant aspects.

This study examines the relationship between the motives of CSEV and the company's engagement toward its external and internal environments. Because CSR initiatives can be classified as external or internal, it depends on the type of stakeholders which CSR initiative they try to satisfy (Kim et al. 2010).

2. Spread of the Corporate Support for Employee Volunteering

The first steps of corporate volunteering are related to the early 20th century in the United States of America. Since then the growth has not stopped, and similarly to the beginning it has stayed steady in the last 30 years (Peloza et al. 2009). Fortunately, more and more companies have become fully aware of the generally positive impacts of CSEV. Corporate volunteer works are a growing way for them to show their commitment to the community therefore they want to join this initiative (Houghtonet al. 2008). The number of Hungarian companies adopting corporate volunteering programs is not rising in such a quick pace as in North America (Hungarian Founder Forum 2011).

Nowadays, the idea that companies offer their employees opportunities to take part in different voluntary work is becoming more popular in the whole business sector, but what is even better is that CSEV is a widely accepted norm in the developed parts of the world (Voort et al. 2009). Despite the growing pressure which so many organizations face, an employer-supported volunteer program can bring considerable benefits. That is the reason why companies willingly adopt this method.

3. Definition of the Corporate Support for Employee Volunteering

The definition of company support for employee volunteering has not been completely clarified, but most specialists agree that CSEV is the encouragement of volunteering in the community through the organization. According to the Community Partnership Movement (2013), CSEV can be defined as a planned, managed effort which tries to motivate employees to serve community needs and help to find solutions to social problems through the leadership of the employer. In other words, corporate volunteerism is one of the most common ways in which companies and their employees attempt to ’give back’ (Brockner et al. 2014). In short, company sponsored volunteerism what *’is an important vehicle for delivering care and compassion to causes and communities in need’* (Grant 2012, p. 589), can improve the employer, the employees, the organization and the whole society too, while the company meets the expectation of social responsibility.

4. Types of the Corporate Support for Employee Volunteering

A variety of opportunities are available for companies, to involve their employees in workplace volunteer programs because CSEV can appear in many forms in the company's life. According to a Corporate Citizenship publication, activities are categorized into 8 groups, which are the following: secondment; skill-based volunteering; personal volunteering; workplace activity such as work experience; mentoring and other one-to-one support; management committee/trustee positions; team volunteering and employee fundraising.

Secondment means that the employee helps the civil organization to accommodate certain tasks and projects. Its length of time can vary from one day a week to three months, a year or maybe more. If the employee participates in the volunteer program relying on his own abilities, competences and knowledge we talk about skill-based volunteering. Personal volunteering is when the employee carries out unpaid activity in his free time for the benefit of the community, which is supported by the company in some way. Workplace activity such as work experience is also a type of the corporate volunteer activities when the company provides opportunity for civil organization to do community service. Actually, the company offers its own field of action as a venue. Mentoring and other one-to-one support means that at regular intervals the employee helps other people who are not members of staff. This might involve for example, career advice. The management committee/trustee positions represent a different category of volunteer work. In this case a relatively senior employee assists the NGO in the strategic operation and direction of the organization or takes up a position on the committee. Team volunteering also provides countless advantages to the community and the team consisting of many employees. It involves challenge events when the staff work together and try to accomplish specific benefits to the community. Volunteering together as a team, is very popular because it is a brilliant way of experiencing something absolutely different as a group, having fun and achieving important goals which have an impact on the society. Finally, the eighth form of employee community engagement program is employee fundraising. This type is slightly different from the previous ones because in this case the employees raise money for charitable causes with the support of their employer (Corporate Citizenship 2011).

In Hungary companies usually use personal and team volunteering or employee fundraising to involve their employees. Employee fundraising could be such popular because

according to Dun and his co-authors (2008), spending money on other people has a more positive and special effect on happiness than spending money on oneself. The Outdoor Mission's survey (2010) also provides data about the frequency of occurrence of the organizational volunteer programs. Only two to eight companies use the workplace volunteer programs consciously and directionally, due to the development of cooperation skills, but these initiatives have been quite rudimentary. The number of those companies whos professional knowledge transfer is included in their volunteer program is also trifling, although this activity could be the most useful and advantageous for the civil organizations. In addition, companies usually collect donations for a good cause, organize blood donation events or make handmade gifts as corporate volunteer work. The results show that companies sometimes place a social cause into the center which harmonizes with the main activity and professional competences of the staff (Molnár 2011).

Companies try to encourage increasingly their employees participating in volunteer work in many different ways. According to Basil et al. (2008), firms give information about volunteer opportunities, provide education about the importance of volunteer programs or maintain records of experience of employees who are interested in volunteering. In order to companies make their volunteer programs more attractive for employees, they might give awards, publish articles about the volunteers or send letter of thanks recognition of their serves.

5. External and Internal impacts

CSEV can offer widespread advantages to multiple stakeholders because CSEV can improve the employees, benefit society significantly, develop better and more valuable relationships with the company's partners and help the company to become a more attractive and responsible employer to those people who are socially sensitive (Brown − Ashcraft 2005). Besides, CSEV can enhance and deepen the internal and external relationships of the company and aids the stakeholders. It helps to establish and manage corporate legitimacy with stakeholders through a strong corporate social performance (CSP) (Liu et al. 2009), because companies compete for institutional legitimacy, not only for resources (DiMaggio-Powell 1983 in Basil et al. 2008). Additionally, the initiatives related to social responsibility proponent

corporate social performance seems to intensify the company's global performance (Luo − Bhattacharya 2009).

Corporate volunteerism can influence not only individuals and communities, because with the help of CSEV the company can create a magnetic image and build a very positive reputation. A lot of firms realize that having a socially responsible and ethical corporate image and brand is profitable and valuable strategy. Besides, it can create and instill a positive culture within the company too (Houghton et al. 2008). According to a survey conducted by Deloitte (2007), more than half of the employees show preference for finding employment and work for a company, where there is potential to take part in voluntary work (Grant 2012). Lafferty and his co-authors (2004) emphasize that cause related marketing is also a kind of marketing initiative which can help the company establish strategic differentiation from rivals and deputize added value to the corporate brand. In my opinion, however, the same is applicable to CSEV. These are secondary benefits which serve the company, not the environment.

5.1. An external face

Companies invest different kinds of resources (money, time, labour and knowledge) into CSR activities in the hope of maximizing the benefits to both themselves and their stakeholder. Many studies have shown that companies which have strong CSR performance enjoy advantages such as customer satisfaction, favourable customer evaluations, customer loyalty (Kim et al. 2010), because CSR actions are obviously to make consumers more emotionally connected to companies (McEwen 2010). Other consumer and psychology studies support that speculation that consumers, who choose a socially responsible firm's product, may feel that the company is doing good on their behalf (Vlachos 2012). As we can see CSR activities have a lot of positive impact related to the consumers, therefore the researchers try to explain the influence of CSR on customer attitudes by the concept of consumer-company identification (C-C identification) (Kim et al. 2010). C-C identification as a primary psychological substrate for deep relationships between the company and its consumers, is a relatively new phenomenon in the marketing (Hildebrand et al. 2010).

5.2. An internal face

As we mentioned earlier, CSEV can influence the employee's work attitude and has a very positive impact on employees' commitment to the company too (Brammer et al. 2007). This is important because many researchers have shown that organizational commitment affects a lot of essential work behaviours, including quality of job, job satisfaction or motivationsystem (Brockne et al. 2014). According to Peterson (2004) organizational commitment and loyalty is much higher among those employees who usually take part in corporate supported volunteer work than it is among those who do not. These employees are interested in how their employer takes care of social problems and how it shows concern for other people with the aim to contribute to a better world. Employees who participate in workplace volunteer programs, identify with their employers to a greater extent (Grant 2012). Companies should consider their employees' opinions about CSR activities and also their willingness to do corporate voluntary work (Kim et al. 2010). The companies can develop and enhance a strong employee engagement through volunteer programs which has high priority because engaged workforce is necessary and indispensable to a firm's continuance, well-being and efficiency. 'Engaged employees are builders', because they are curious about the company's life and their colleagues. They work with passion and want to show their talent and competences at work every day. Engaged employees are loyal and keep their mind on the company's interest (Coffman 2002 in Jarvis − Parker 2011). In the case of an organization where the level of employee engagement is higher, a significant performance uplift is experienced. These positive changes can concern general productivity, customer loyalty, profitability or quality development too (Jarvis − Parker 2011).

There are internal and external impacts of CSEV therefore Porter and Kramer (2006) approve of the integration of business priorities and social aims. They distinguished two overall categories of CSR: responsive and strategic (Figure 1). The two cathegories are based on three dimensions. Responsive CSR emphasizes the generic social issues as part of the company's corporate citizenship behaviors and strategic CSR focuses on the competitive priorities and business goals. Between the generic social impacts and the competitive context, value chain social impacts can be found, which could be the part of both responsive and strategic CSR. Generic social issues are not considerably affected by a firm's operations. Value chain social

impacts are those factors that are significantly affected by the company's activities in the ordinary process of business. Finally, social dimensions of competitive context are factors in the outside environment that considerably concern the underlying drivers of competitiveness in those places where the company operates (Porter − Kramer 2006).

Figure 1 Porter and Kramer's CSR framework

Source: Porter − Kramer (2006)

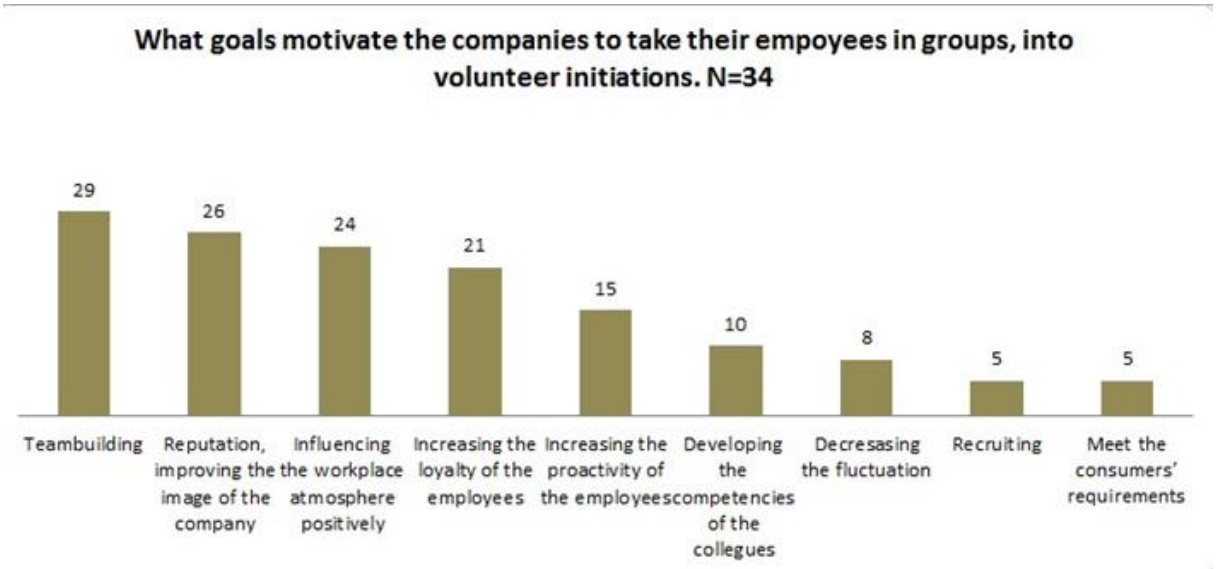
In their study, Porter and Kramer declared that strategic CSR means clearly competitive advantages for companies. No company can answer all of the questions which are arising in the society. Each firm can select concrete social issues that cross its particular business. According to the authors, CSR is an opportunity which can provide competitive advantages for company by investing into social causes, thereby a symbiotic relationship is formed.

6. Numbers about Hungarian volunteer programs

According to a Hungarian survey, which was carried out among the 200 best accomplishing companies (on the basis on their net income, not including the companies in the financial sector), we can examine on what basis the organizations support the practice of volunteer work institutionally and what factors motivate the companies to involve their

employees in volunteer work. At present, voluntary work in Hungary is organised on the basis of the normal development of the companies' normal business line. This concept is supported by companies taking part in the survey, as according to their answers, their most important goals are working in teams, building reputation, improving the image of the company, influencing the workplace atmosphere positively as well as increasing the loyalty of the employees (Figure 2). It should be added that only 19 percent of the visited companies were willing to answer this question. The low number of answers is probably due to the lack of volunteer programs offered by the companies, but the percentage of the declined answers was also high (29 percent of the companies declined to give an answer). It can also be related to the lack of volunteer work supported by companies. Necessarily, there are several other motivation factors in the background which were mentioned by the companies such as increasing the proactivity of the employees, developing the competencies of the staff or decreasing the fluctuation. Several respondents reported that by giving a proper voice and publicity to their selflessness, companies would be able to meet the consumers' requirements, as well as conduct an attitude and teambuilding activity to support a part of the society[1].

Figure 2 Motivations of organizations

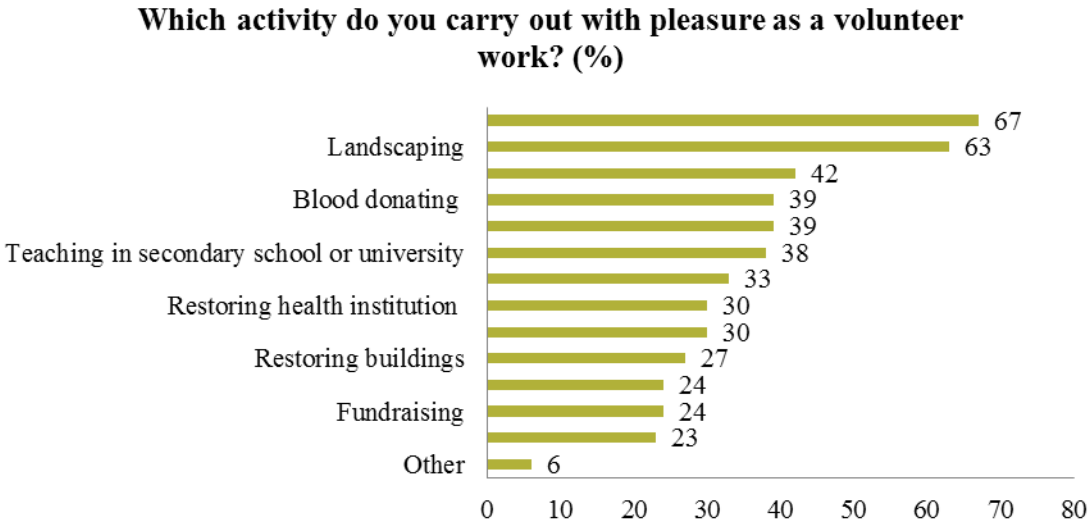


Source: www.donorsforum.hu

[1]Hungarian Founder Forum (2011) http://www.donorsforum.hu/hu/letoltes/category/8-kutatsok?download=224%3Avllalati-nkntessg-top-200-2011.

Another study investigates the most popular volunteer work among the company's employees in Hungary (Figure 3). In the second diagram we can see the remarkable popularity of 'repairing playground or kindergarten' and 'landscaping'. Other volunteer activities, for example 'restoring buildings', 'repairing animal shelters' or 'removing graffities', are less popular. Very interesting to see, that the rate of the occurrence of fundraising is only 24 percent. This result is inconsistent with those data that in Hungary fundraising is in the first three popular volunteer activity.

Figure 3 Volunteer activities



Source: Molnár (2011)

We can draw the conclusion that even if the nonprofit sector in Hungary has gone through dynamic development and increase in the last two decades, it still has financing problems, therefore not all of the goals are realizable. Due to the financial difficulties, the sector needs the employment of more civil volunteers and more companies whhic latch on to volunteer work.

7. Summary

Company volunteering has a considerable space for growth and development both in practice and in theory due to the global interest. There has been an enormous evolution since the early 20th century and it has not finished yet. Day by day, more and more companies are

realizing that providing volunteer opportunities to employees is very profitable and useful to the company, the employees and the community too. Some of the companies seem to be able to collect substantial information and skills from business atmosphere and utilize them to find a solution to the current business context. Smart companies possess this valuable ability but others do not. Through the company support for employee volunteering programs companies can increase their intelligence and become smart and capable of developing leaders.

The rapid expansion of volunteering programs reflects the companies' increasing and wide-ranging interest in community welfare, equality and social justice. The reason of the spread is that the main aims of corporate volunteer programs are to improve the physical and psychological well-being of those beneficiaries who are targeted by the organizations.

But the definition of CSR and the relationship between the CSEV and CSR have not totally clarified and as we can see there are a lot of arguments for and against corporate social responsibility. And why is it so dangerous? Because the negative perception of CSR might reflect badly on volunteering as well. That is the reason why clearing up of contradictions and relationships is so important

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7. The A**ppearance of** Children in a Consumer S**ociety**

Katalin Pap

Nowadays, children's appearance as costumers is becoming more and more important beside their role in the society. Their consumer habits differ from the habits of the young and adults, which justified the perspective to view children as an insular consumer target group. Children are not just present consumers, but also the influencers of their parents and peers, and future consumers as well, thus the special attention is justified. In addition, children consumer behavior researches reveal that consumer habits developed in childhood may have an effect on their future consumption, which requires a more detailed understanding of consumer habits of children.

The study is based on previous studies and the goal is to give an overall picture about the process how children become consumers, along the main stages of consumer socialization in order to get to know the children, as consumers. Although, consumer socialization is a lifelong learning process, in this present study children are coming to the forefront. The central element of the consumer socialization is the family, in which the parents occupy a special position, but the role of siblings, peers and media are also not negligible. The latter is especially important, because number of studies revealed that free-time activities of children have changed over the years – because of the growth of the information society. While previously children spent their time with their friends outside, nowadays with the appearance of the newest computer tools, leisure activities shifted into indoors. Regarding the media usage habits it can be said that in many cases they use the new media more easily, than their parents and they often teach adult family members about the new opportunities. Based on these, it is important to note, that not only the environment has an impact on children, but children are also able to influence other people, such as their parents. Regarding this, in some cases parents can also learn from their children, which could have a consequence as a re-socialization process, when children could modify the consumer habits of their parents.

Keywords: children, consumer socialization, family

1. Introduction

For many decades, children as a consumer group were not regarded as an important segment. Although, the first researches on children were made in the 1960s, the researches - from the marketing point of view - nominating children as a separate group of consumers trace back to the 1970s. Their role has changed significantly over the past decades due to our changing world. According to some views, children are three markets in one. Firstly, they are the current market that spends money on their desires, secondly, they are the market of influencing their parents, and thirdly, they are the future market for most goods and services (McNeal 1987). This is the reason I have chosen this segment to analyze their consumer decisions and their consumer socialization process.

In this study I am going to summarize the most important and relevant information regarding the topic. In this case, I will give the definition and development of the consumer socialization process. During the introduction of consumer socialization I will write about the most important stages of the process and about the main factors like family, parents, child demographics, and media, which is one of the most relevant factors nowadays. Of course, there are more factors which could have an effect on children consumer socialization and their consumer behavior, but in this study I would like to focus mainly on the family. At the end of the study I am going to summarize my article and introduce my plan for further researches.

2. Consumer ocialization

Consumer socialization is a priority from the marketing point of view, because the consumption is becoming more and more important in everybody's life. In the classical economy, consumption means meet the needs. Nowadays, it is important to note, that consumption has become a part of the culture, which is closely related to the social relations system (Swedeberg in Janky et al 2005), as well as the social recognition (Lindenberg in Janky et al. 2005).

Ward (1974) gave one of the first definitions of consumer socialization of children. According to this consumer socialization refers to the *„processes by which young people acquire skills, knowledge and attitudes relevant to their functioning as consumers in the market place"* (Ward 1974, 2). This theory was improved by the fact that the consumer socialization is an active process, because the individuals studied how others behave, and with this method they collect information about the environment and the economy (Moschis − Churchill 1978). This theory was also improved by Roedder John and Cole (1986). According to the theory of Roedder John, in the consumer socialization process we can distinguish three phases. The first phase is the perceptual stage, which lasts form the age of 3 until age of 7. At this phase, children take simplistic decisions. The second stage is the analytic phase, during which the children are able to examine situations in several ways. In the third phase – called stage of complexity – understanding of the complex problem became important. This phase is relevant between age of 11 and age of 16 (Roedder 1999). It is important to note, that the consumer socialization does not end with the adult division, because it is an ongoing process.

In recent years, two main groups of consumer socialization have been identified, called cognitive factors and environmental factors. Cognitive factors typically associated with the

age of the children, while environmental factors include family, peers, and media. In this article I am going to introduce the mentioned factors.

3. Environmental actors

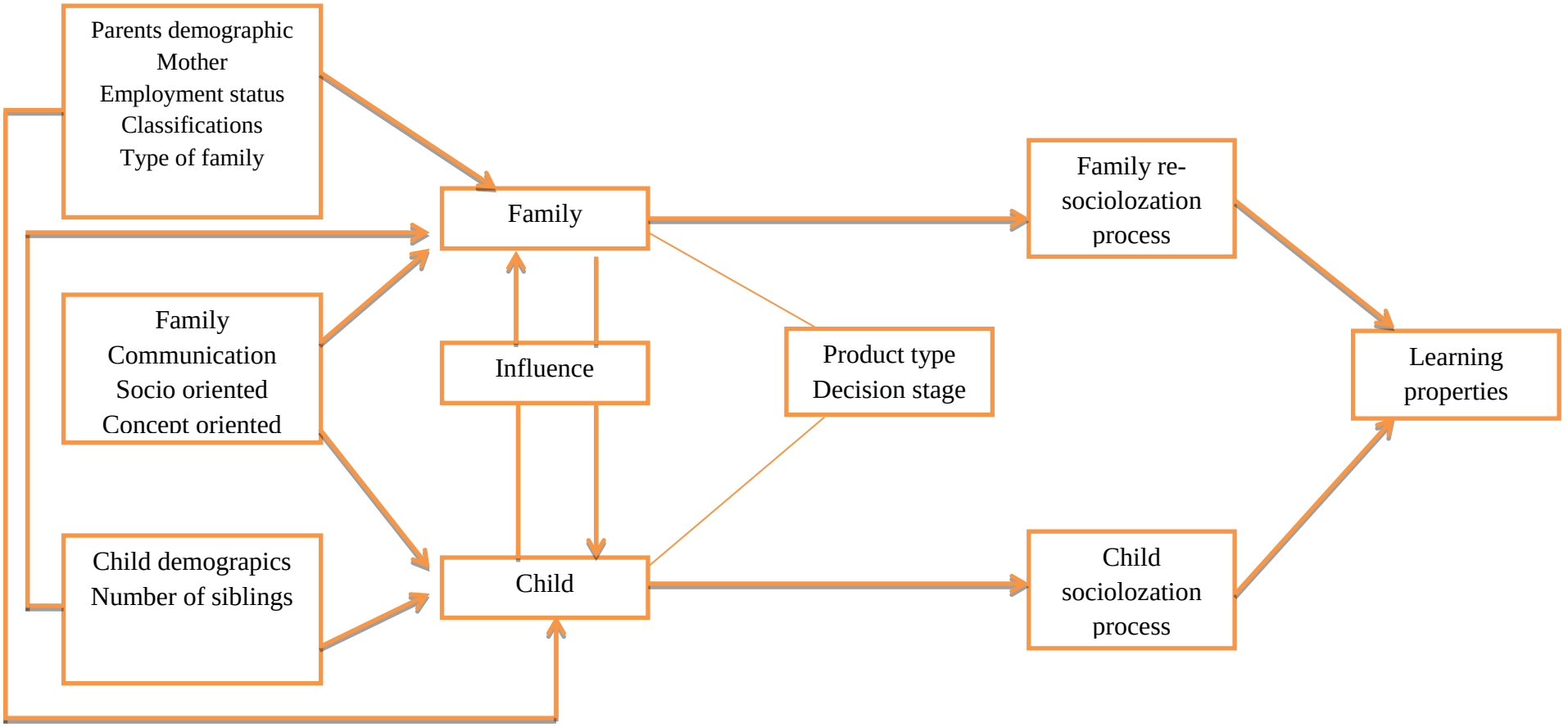
In this part of the study, I am going to write about the main environmental factors, which are summarized in the Figure 1. As you can see, there are several influencers between the environmental factors. This model was introduced by Sharma and Sonwaney (2014), and a show that children learn from parents, but it is a two way process, because children are teaching their parents too, how to change their opinions about different products. This proposed model looks at the effect of family variables on the influence of children on their purchase decision making process. The model needs to be tested, and one of my goals is to make the basis of the research in this study.

3.1. Family

Role of the family is one of the most important socialization agents in children development. However, family members are not chosen by children, the key attributes and values are formed within this framework, which have a major impact on their future decisions and attitudes. The family can be defined in numerous ways. In the statistical surveys family means parents and their unmarried child/children of their household (Andorka 2006). In contrast with it, according to Kotler (2006) there are two families in people life. One consists of parents, while the other consists of their own children and their wife/husband. Family classification is not a new concept, but really important in children consumer socialization point of view. Giddens (2003) distinguished four family types. Based on it, we define:

- nuclear family (a man and a woman in one household),
- extended family (three or more families living together),
- family of origin (family where we were born),
- generative family (which we enter as adults and within children growing up).

1. Figure Influence of child on family purchase decision and its relation to family variables



Source: own construction based on Sharma − Sonwaney (2014)

It is important to emphasize that family decisions are group decisions, in which different people take part in different roles (Törőcsik 1996), and in this way children too. According to this, children can be influencers, ushers or decision makers as well. Depending on which family members are involved in the decision making, a variety of decisions can be distinguished (Törőcsik 1996):

- Shared decision: In this case all the family members are taking part in the decision making. It is typical when the product requires a larger amount of money.
- Parental decision: Parents taking into account the child's perspective, but they take the final decision.
- Maternal decision: It is typically the case of routine products, that family use every day, and the responsible person for the purchase is the mother and because of this she decides which product to buy.
- Parental individual decision: decisions in which the parents separately buy products for themselves.
- Children decision without conflict: Typical for products, which are important for children and they know a lot of information about it.
- Children decision with conflict: Usually occurs when a product is paid by the parents, but they disagree with the product because of their negative impact or cost.
- Competence decision: Base on the expertise. In some cases the children and parental roles could mix up.

3.2. Parents

Within the family, parents clearly have the greatest impact on the children. This is true in general and in the case of consumer socialization. From the parents, mother has a greater impact. According to studies, mother's materialism level and communication style has an effect on child's future level of materialism. It is true mainly for daughters (Flouri 1999 in Sharma − Sonwaney 2014).

Mother's employment status is also an important factor. According to studies, mother who working in full time status, shopping more than mother with part time status or who are not working (Haynes et al. 1993 in Sharma − Sonwaney 2014). In my opinion, this could be compensation because of the time which they spend separately. On the other hand, there could be the fact that for mothers who work full time is simply easier to afford expensive toys, clothes or other things for their children. The researched question might be raised asking

which one is preferred by the children. The expensive products or the time what they spend together with their mother? In my future researches I would like to deal with this question, but in this study I do not take this problem into consideration.

In connection with parents it is important to mention the different family structures and differences, in this case for broken families, single-parent families and two-parent families. Researches have shown that single-parent families more often do the shopping with the children and children have more possibilities to express their opinions and preferences (Tinson et al 2008). As I see, in single-parent families, where the parent and the children doing more often together the purchases does not mean that they care more about their children. Joint purchase could be the enforcement as well, when the mother or father does not have someone who can take care about the children when they are in the shopping mall. In addition, in single-parent families it is typical that parents do not want conflict with their children and because of this they simply hand down the decision making for children.

3.3. Peers

After the family, peers are the second with whom children spend their time, and it means they could have a serious effect on their consumer habits. Studies showed that individuals with low self-esteem are more sensitive to friends influence (Nuttall − Tinson 2005). These studies also showed that children's could be agents of control for other children and they can give rewards or punishment for peer behavior. In this case we can say that peers are a miniature culture with their norms, and every child has a function in this group (Reise – Sprecher 2009).

Most children have an effect on other children in from the age of 6-8, because this is the time when they find profound friends. The main important factors of their relationship are the loyalty, mutual understanding and the intimacy. In these factors peers effect are more important than the effect of parents or other adults (Vajda – Kósa 2004). Peers have positive and negative effects on children as well. Positive effects could be for example the development of sociological competences, providing support and emotional security, and they give a sense of belonging. Of course there are some negative effects like, consumption of drogs or alcohol (Pikó 2005).

3.4. Media

In the 21st century, the internet changed the media, and with this the consumers' behavior and their attitudes, as well as their post-purchase communication. In the past years a new platform, the social media is introduced and it is more and more important in everybody's life and in the communication as well because there are options to express opinions and experiences (Mangold – Faulds 2009). But this has a side effect too. These sites are available not just for the adults, but also for children where they are not able to distinguish the advertisements and real consumer opinions.

The appearance of children in the social media is a discussion topic not just in Hungary, but also in other parts of the world. The importance of the question is showed by the number of the children in the social media. 22 percentages of the children (10-14 years old) use their favorite social media more than ten times a day (O'Keeffe − Clarke-Pearson 2011). According to a Hungarian research - which made by G data in 2013 – more than quarters of the children below 13 are already registered for Facebook. During the data collection 1000 people, between age of 18 and 75 were asked, who are using the internet at least one time a week. Interesting data, that 4 percent of the responder had no information if the child - who lives in their household – are registered or not for the biggest social media platform[1]. The role of the parents has key importance relating in this topic. But it is important to note, that it could happen that children register for the social media without parental approval or with false information. These could have different kind of consequences.

Nowadays, the new technologies like smartphones, tablets are also able to reach social media networks, and it makes the situation more confused, because most of the parents are not monitoring what children on these platforms do. Furthermore, ethics in social media and social media advertisements could also be a research topic, because the advertisements are applied based on the registration data and it could have an effect on their present or future features.

4. Cognitive factor – Child demographics

The demographic characteristics of children also could have an effect on children consumption and consumer decisions. Regarding their decisions one of the most important factors is the age of the children. The older the child is, the greater their contribution in family

[1] http://hvg.hu/tudomany/20130705_atverik_a_facebookot_a_magyar_gyerekek

decisions (Ahuja − Stinson, 1993 in Sharma − Sonwaney 2014). Furthermore, it is important to note that the older the children, the more they became brand-, and price oriented. In addition, it is relevant to mention that younger children usually express their opinions regarding to the foods, while older children express their feelings mainly regarding to the clothes (Ozgen 2003 in Sharma − Sonwaney 2014). In my own researches, I also experienced that for the younger generation sweets and games are more important, while for the older generation fashionable clothes are in their priority. Here I should mention that during the interviews with the parents, they noted several times that they usually make a pre-screening, when they choose the possible products for their children. As I see, pre-screening could be good for both parties, because parents could avoid their children from the harmful, unhealthy or expensive goods, while children will not be angry or unhappy because they can make the final decision what make them satisfied.

Beside the age of the children the number of the children in one family could be also relevant. The more children in one family are, the stricter the parents are (Guneysu − Bilir 1988 in Sharma − Sonwaney 2014). In my opinion, this is a defensive effect and with this they just try to control their children in this way. When there is only one child in the family it is easier to handle when they are angry or unhappy, but when there are more children it is harder to handle the problem and it could have more serious effects.

In addition we have to mention that children in smaller families gain consumer capabilities earlier. It is the result of the way of communication in smaller families, because families with fewer children spend more time with involving of children in family decisions (Sharma − Sonwaney 2014).

5. Future research

In the introduction it has been defined what the socialization process in children's life means. According to this, it is a process when children acquire skills, knowledge's and attitudes, which are relevant to become a consumer in the market. In the consumer socialization the family has a key role, but children also could have an effect on family and family's decision.

With primer researches I want to develop the introduced figure which was made by Sharma − Sonwaney (2014). In my own research I would like to focus on the exemplars of the children and explore which are their reference groups and who are the people who have an effect on them. In addition, I would like to get a picture how the exemplars change in the past

years and decades and what the effect of them is nowadays. During my primary research I will use qualitative methods. First of all, I will make interviews and secondly, I am going to organize focus group interviews as well. My target group would be the children between ages of 10-14. Based on these researches, I am going to consider the mentioned figure and develop it.

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8. Event M**arketing** and Experiential M**arketing in** the Scope of Culture and Arts

Magdalena Wszolek

Together with pacing market saturation contemporary consumers started to be much more discerning and selective, which has triggered off multiple changes in the marketing studies. Nowadays, these are experience and value economy that govern consumers' decisions and businesses' viability. In these new circumstances, marketing communications and their tools have gained an irreplaceable role of conveying value to people in a consistent, memorable and distinctive way by each touch point. The main goal of this paper is to show the potential of experiential marketing and event marketing with an insight into cultural approach, namely, into the area of arts, in the effective realization of integrated marketing communications. The major research question in this paper supposes that those tools in the area of arts facilitate building a consistent communications strategy and a brand image globally. To continue, it is assumed that the employment of various experiences and the creation of events in this scope provide the company with a strong community of attracted customers, and yield new opportunities and render the company distinct on the market. Since this paper is a preliminary stage, actually, intending to highlight the importance of investigating this matter further, the desk research in the form of case study has been performed on the analysis of the Red Bull case study, narrowed to their undertakings in the field of arts to show examples of the projects of cultural character.

Keywords: event marketing, experiential marketing, arts

1. Introduction

It has become generally accepted that marketing is not a set of randomly undertaken actions in order to satisfy consumer needs but it requires a huge effort to execute and plan accurately and consistently. Kotler and Keller (2007, p.2) noted that "*marketing is both 'art' and 'science' – there is a constant tension between the formulated side and the creative side*". As a result of evolution of marketing concepts the most revolutionary and breakthrough one is the holistic marketing concept, which regards marketing in a multi-faceted and broad perspective and favors marketing activities, programs and processes. Another influential phenomenon has been identified by Hollensen (2010), namely, a great transition from transactional marketing (TM) to relationship marketing (RM), partially being created in contrast to each other. The evolution of marketing concepts led to production of different takes on brand, Heding et al. (2009) elaborate on various takes on approaches to brands, however, lately inclining to personality, community and cultural approach, approving of a central position of a brand in social interactions and seeing brand as a cultural artifact.

Amongst the wide range of competitors a firm strives for being heard in the marketplace and due to numerous conditions this striving has to be dealt with in a consisted, integrated and clear manner. (Clow − Baack, 2004) It is emphasized that since integrated marketing communications (IMC) foundation is to *"achieve the enhancement and coherence of marketing communications effort in achieving predetermined product and corporate marketing communications objectives"* (Pickton − Broderick, 2005, p. 26).

In this paper those altered focuses and significant turns have been clashed with opportunities that are evoked by current phenomena and trends in the world of arts and culture. Nowadays, culture recipients seem to be more frequently called cultural consumers, interested in arts, urged to be entertained and eager to try numerous and diverse conventions or styles. (Kolb, 2005) Since the relationship between culture/arts and business has not been investigated that much yet and, usually, they appear together while presenting the nature of cultural institutions and their promotional activities, rather than as means by which companies may gain profit, it is worth uncovering those undefined correlations. This paper has a purpose of identifying some cues for further investigation of culture and arts in relation to business purposes by revising previous literature, and the research question is whether these scopes may form a great potential for the utilization of marketing communications tools and brand management. This text being the preliminary stage of future research in the aforementioned matter, targets at delineating up-to-present discoveries and results, and subsequently, it proves those subjects' feasibility by providing a desk research on the case study of descriptive character on the Red Bull company.

2. Literature review

Culture is an area of human activity that has always been with people, but which has also been changed lately due to sociological, technological or economic reasons and proliferation of lifestyles. Among those recent tendencies one may notice expanding multitude of tastes and blurring boundaries between high and popular culture and currently changing myth of the artists' top-down approach, deprived of customer-orientation. (Kolb 2005) Moreover, post-postmodern branding paradigm emerged, in line with which, consumers are creatures that express their selves by consumption of certain brand icons, capable of telling stories and shaping mainstream culture (Heding et al. 2009).

Taking a closer look at the matter of experiential marketing, it is worth beginning with presenting Smilanksy's point of view (2009, p. 3) stating that it is a core approach to

accomplish contemporary communications objectives, whose gist is "*a two-way interaction in real-time, a live brand experience and thereby a significantly deeper consumer bonding process"*. Arts experiential consumption occurs when an individual undergoes a personal flow of feelings, thoughts, actions, sensations and references caused by a purchase, use or contemplation of a given piece of art. Looking from a perspective of arts experientialism, this kind of experiential marketing is believed to engage hedonic values, "with a sense of exhilaration, energy, fulfillment, and enjoyment or the so-called 3Fs of fantasy, feeling, and fun." (Tao 2013, p. 1535) Among other reasons behind culture incorporation in experiential marketing may be given: namely, story-telling potential and community engagement. It is argued that human natures to learn through stories enhance interest, cognition and bonds, and the more passion drivers are shown the better the effect is (Darmer 2008). In the end, it is worth highlighting that the growth of online communities has improved customer experience management, which led to a new quality in creation and distribution of pieces of art (Salo 2012).

While discussing event marketing Saget (2006) highlights its strategic nature sought in the fact that event marketing is predominantly based on external and internal relationships and experience and learning process derived from all the elements of the surroundings and the internal environment. Events pose an opportunity for consumers to exist in brand hyperreality, become an active recipient of brand communication, when a brand or a company become so close and approachable that what happens is *"blurring the boundaries of the sacred and profane, (...) distorting the commercial and social"* (Crowther 2011, p.75). Upon intending to show the potential of culture and arts scope in terms of event marketing it should be clashed with the previously described experiential marketing. Indeed, event may be treated as an experience by interacting with the content presented to them at the very spot and memories that linger afterwards (Getz 2005). What may justify the use of culture and arts in event marketing is additionally the theory of carnivalesque of culture and the society of spectacle, where the eagerness to be placed in the hyperreality, being the mixture of the real and the created, is dealt with as a sort of escape from norms and restrictions. (Dziewanowska − Kacprzak 2013) The mechanism of event marketing functioning in the field of culture and arts has been depicted in the article by Vila-Lopez and Rodriguez-Molina (2013). It is suggested that this scheme is quite different from other areas, such as sport, since it indicates the pattern of participants' behaviors by bringing a person to a subjective state of consciousness given the existence of symbolic meaning, hedonic responses and aesthetic area.

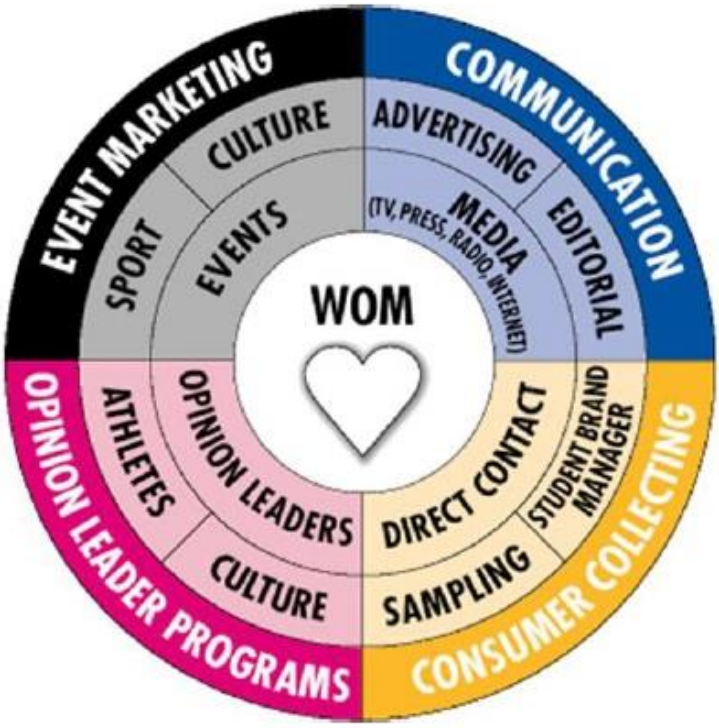
3. Methods

As this paper is a preliminary attempt to highlight the importance of analyzing the use of culture and arts in brand management through experiential marketing and event marketing the method of research was to select a company that may constitute an example of building the brand image on the basis of those tools in the given scope. The impact of their implementation was sought through analysis of various internet sources on the company. It includes professional websites and forums on marketing and brand management, as well as, those that simply describe actions of the company to the everyday users and Internet surfers. In this attempt it has been strived to observe how the use of the described tools matches the overall brand management and strategy, being partly an outcome of marketing communications strategy. What has been done is presentation of its general communications strategy, later on confronted with two selected, sponsored events in the field of culture and arts. The aim of such a clash is to show that this area should be thoroughly investigated and examined by conducting broader research on more companies and consumers.

The object of desk research - Red Bull: The creation of message and its positioning Red Bull constantly utilizes the phrase: 'revitalizes body and mind' or 'gives you wings', which is a successful attempt to convey the tangible benefits in a comprehensible and easy-to-grasp manner, suited to all the targeted audiences (Keller 2008). These are globally-accepted and culturally-free slogans, also present in commercials, ensuring message differentiation by revealing unique attributes and shaping a unique selling proposition (USP) (Grewal − Levy 2014). To outline Red Bull's marketing communications strategy it is based on four main pillars rotating around WOM, consisting of opinion leader programs, consumer collecting, communication and event marketing. What can be concluded on the basis of this draft is that the company's characteristic is IMC perspective because of the great level of interrelatedness between those elements (Figure 1). The preoccupation with creating buzz rotating around this model is very noticeable in the reference to events and sponsorships that the company engages with, hence, in order to get exposure, rich content is being created through all social media, Red Bulletin or website www.redbullcontentpool.com. In the experiential marketing of Red Bull, the value of authenticity is greatly pursued in delivering brand message, creating its own events rather than passively and solely depending on sponsorship The experiential nature of Red Bull's marketing might be also described as a mission to *"bring barely imaginable experiences into existence, and give them all the spectacle"* (Northcott 2009). Turner (2008) states that together with expansion and growing popularity this product managed to invent so-

called ‘cool factor’ by building such an intensive brand experience that consumers automatically associate it with something positive, which fortified a brand story as a cultural classic.

Figure 1 The scheme of Red Bull’s promotional strategy



Source: Ćwięczek (2013)

3. Results: Red Bull – engagement in culture and art

Music and dance engagement became a significant contribution to consistent IMC and brand management of Red Bull. Since it is noticeable that among the competitors a domineering number of players occupy the field of sports, Red Bull has always sought for some other alternative ways to get expected interest and efficiency of its activities in experiential marketing and event marketing. The company has found accurate points and connotations in culture that relate and transfer the very essence of the brand. Since revitalization that the product stimulates concerns body and mind, thus, it also means creativity, any creation of art is well suited to this concept. In other words, not only the world of sports requires and welcomes the support of energy boost, but so does the art, being also the branch that involves high physical and mental endurance. Together with the revival, the symbol of wings may be moved to the artistic matter by enabling people to create, get

inspired, express themselves and reaching for some other levels of realization or consciousness.

3.1. Red Bull Music Academy

To give a more in-depth insight into one of the cultural events, Red Bull Music Academy (RBMA) is treated as an initiative that lets for exploration and a forum of music history, technology and its business as such, where ideas and knowledge are intended to be shared. Coming to some organizational aspects, Boswijk et al. (2007) describe it as an annual event, revealing long-term orientation, which is held in a different place and country each year and participants are divided into groups on the basis of some similarities in musical terms. This undertaking is being greatly integrated into Red Bull's marketing approach and IMC, by being consistent with 'gives you wings' mantra and by providing a platform where zealous musicians may realize their dreams thanks to music as a tool of communication. In such a way, the brand positioned itself as a supporter of bringing unique ideas to life, people from diverse backgrounds in one place and music industry at hand. Inglis (2006) says that the fundamental objective is to organize RBMA in such a way that participants may feel the place, its potential is used to the full by uncovering its local flavor. What plays significant role is simultaneously its website, which is covered with multitude of articles, galleries, features, films and interviews, and RBMA radio, where certain collaborations and icons of editions may be reheard, as well as, profiles on Vimeo, YouTube, SoundCloud, Twitter, Bandcamp or Facebook. Multiple events connected with its activity are organized during the year in all engaged countries, which might be seen at the website in their categorization. Besides its presence in different clubs throughout the countries, it is simultaneously associated with several music festivals such as Sonar, Mutek, Movement, Montreux Jazz, St Jerome's Laneway Festival or Winter Music Conference, and it has its recording studios, letting for development of built musical network of contacts. (Red Bull Music Academy 2014).

3.2. Red Bull Flying Bach

The project Red Bull Flying Bach is produced within the fields of music and dance, uniting and at the same time clashing the world of high culture, represented by Bach's artwork, and the world of street art by breakdance. The concept was to harmonize those two spheres, shaking international classical milieu by facing it with youth culture (Flying Steps

2014). Flying Steps is a dance crew, being the kernel of this initiative, established in 1993 by five b-boys from Berlin with the main choreographer, Vartan Bassil, bringing his crew to championship in Red Bull Beat Battle twice and Battle of the Year twice, too and its cooperation with Red Bull totals to more than 10 years (Flying Steps 2014). The premiere of this piece, Red Bull Flying Bach, took place in 2010, thanks to collaboration with an opera director, Christopher Hagel, whose artistic goals had always been connected with incorporating modern lifestyle into high art. The artists wanted to bring this union to the world by the means that would be understood everywhere (without spoken language), and with the universal content that should be received appropriately regardless of location (Red Bull Corporate Publishing 2013). The overall goal or message behind this production became making this fusion and meeting of high and street culture socially acceptable, and to motivate those both worlds to respect and learn about each other, as well as, to response to nowadays' perception and position of culture, remaining poor and unapproachable due to insufficient attention or strictness of school curriculums. Again, repeating mantra of Red Bull, gives you wings, it corresponds to rejecting those restricting frames and gaining freedom, and, in addition, the name of the crew of dancers featuring this piece is Flying Steps, perfectly matches. The audience who the event reached was mostly represented by age group 26-35 years old, and on average, it was 31,6. Since Flying Steps is a commercial entity, not a cultural institution, it did not have an obligation to educate, though it managed to prompt audience development and foster cultural mediation (Schmitt 2012). Next to it, the image of breakdance is linked to breaking rules, overcoming one's own bodily and psychological limits and norms of society (Kemble 2011). The piece's success may be also proved by obtaining an award, ECHO Klassik Sonderpreis, for outstanding achievements in classical music and Sold-Out Award awarded by Ticketmaster (Red Bull 2014).

4. Conclusions and discussion

This paper is only a preliminary phase of more developed examination of the use of culture and arts in the marketing communications tools and its subsequent impact on the brand management. It has been a limitation that only one company was presented, because it has not provided relevant and measurable outcomes. However, its purpose was to indicate this scope as an interesting and fruitful matter for new investigation and examination, and to identify interrelations that exist. Due to the fact that marketing studies, their paradigms and foundations have altered, marketing communications tools also call for redefinition and

reassessment. In this work, the light has been shed on the potential of experiential marketing, event marketing and sponsorship once clashed with the field of culture. Since culture has always been inherently related to experience creation and sharing something creative and genuine, and nowadays it is becoming more approachable and flexible from the business point of view, it may be viewed as a quite promising scope to occupy.

On the basis of this theoretical research and desk study on Red Bull, the main goal of identification of marketing communications tools in cultural initiatives shown on the example of Red Bull Music Academy and Red Bull Flying Bach. It is quite widely accepted by numerous marketing practitioners that the company employs marketing communications tools in an innovative and original way, which are accurately matched with current consumers' behavior, as well as, with the specificity of the product. In order to distract attention from ambiguity around the product's safety and utility, those tools which bring added value for consumers, such as excitement or community building, are mostly highlighted. Since the great part was devoted to the role of culture or arts in the chosen marketing communications tools, it needs to be underlined that the choice of art and growing involvement in the scope of dance and music make the company distinct and outstanding from other businesses. Since the common strategy is still to sponsor or create events and experiences in the field of sport and, once the culture is chosen the sponsors or organizers remain a little unnoticed and passive, Red Bull with its active contribution to each produced action acquires completely different status on the market.

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9. Sustainable Consumption in the De-growth Transition The Case of Local Foods

Judit Dombi

De-growth is strongly different from the usual mainstream economic theorizing. According to the thinkers of this line of economic thought growth is not necessarily desirable. Moreover, in many cases it is specifically harmful and the cause of our ecological and social problems. Hence, the proposal is to restructure the current growth-oriented economic system democratically and peacefully, and to think of new means and ends in order to move towards real sustainability from the aspect of society and environment too.

The theory of de-growth suggests to localize production and consumption as much as possible, so in this way these can be one of the keys to start the transition. My research questions are that what are the characteristics of sustainable de-growth consumption, and how can the different kind of local food movements serve the goals of de-growth from the aspect of consumers.

Keywords: de-growth, sustainability, re-localization, local food system

1. Introduction

The theory of de-growth is an alternative sustainability approach focusing on that constant economic growth is not solvable in this current capitalist system, moreover it is not desirable. Hence it focuses on how to manage a transformation towards real sustainability. In this paper I introduce briefly the theory of de-growth, then as a part of it I explain the importance of re-localization, a principle which is essential for organizing and achieving sustainability in consumption and production. After, I describe what sustainable consumption is in this framework – which cannot be interpreted without sustainable production –, how individuals and communities should act in order to achieve the de-growth goals. Finally as local food systems are relevant means of de-growth I make an attempt to create a possible evaluation framework for them from the aspect of consumers, then I shortly introduce two case studies.

2. About de-growth

The idea of de-growth appeared as an alternative reflective direction to find solutions for the problems and challenges caused by continuous economic growth like widening territorial and

income differences, well-being problems, global environmental problems (eg. damaged ozone layer, climate change, and the overuse of other global common pool resources like rainforests and oceans) (Latouche 2011, Layard 2007, Málovics – Bajmócy 2009, Meadows et al. 1972, Stiglitz 1997). Thus the aim of de-growth is to help democratically and peacefully the transition into a more equitable society and livable environment without extending the size of economy (Latouche 2011, Martinez-Alier et al. 2010).

The essence of de-growth is not supporting de-growth in the current system – as growth-oriented economies based on the institutions of capitalism are not capable of not growing because without economic growth they collapse and new problems emerge beside the aforementioned ones – but restructuring completely into a system where increased well-being can be achieved without the constant growth of production and consumption while their negative environmental impacts significantly reduce (Gould et al. 2004, Kallis et al. 2012, Latouche 2011, Tokic 2012)[1]. Thus de-growth is actually a kind of transformational sustainability theory which is very sensitive to social and environmental problems also (Hoopwood et al 2005).

The meaning of the expression of de-growth can be defined from three different aspects – slogan, social movement, scientific theory – but they cannot be sharply separated, since they constantly interact with each other. De-growth is a good example for "*activist-led science*" where the knowledge generated by the movements clarifies and strengthens in the academic literature (Demaria et al. p 204). The activist knowledge is generated by community groups through experience and covers different concepts like ecological debt and environmental justice. From time to time these concepts are taken and redefined by science. The opposite of this can also happen, that civil activism can start to use academic concepts. The steps for the implementation of de-growth can be grouped into four main categories, depending on which level of the society is affected: individual, community, national, supranational (Liegey et al. 2013). This is the point where scientific theories and movements continuously interact with each other, so there is no strict boundary between the two aspects.

[1] Although there is a debate whether de-growth can be achieved within the frame of capitalism or not (Boillat et al. 2012 , Bonaiuti 2012, Deriu 2012, Griethuysen 2012, Lawn 2011, Trainer 2012).

3. Re-localization

The base of the theory of de-growth in the 21st century belongs to Serge Latouche who lists 8 principles for de-growth – as he calls "the angel circuit of the 8Rs": re-evaluate, re-conceptualize, restructure, re-localize, reduce, recycle and reuse (Latouche 2011). Among these 8 principles the principle of re-localization is one of the most important and also it is strongly related to the topic of local foods so now I highlight only this one.

Re-localization means local decision-making, highlights the local needs, which are satisfied from local production and for which local money is paid. Local culture and local political life should be strengthened, and the participation in the decision-making should be enabled as much as possible. So this re-localization principle, the belief in the community is one of the most powerful, can affect significantly the further researches. The whole movement could facilitate the formation of a kind of identity for each area.

In this way according to Latouche (2011) the result would be inter alia the protection of environment, increasing well-being, less stress, more transparent production chains, decreasing dependence from multinational companies, increasing safety in all sense, strengthening democratic attitude. The realization could be started first in the field of food supply, and later it could be extended to a broader economic and financial self-sustainability too.

Developing stronger local and bioregional economies could also be the part of the solution for the global energy problems (Newman – Jennings 2008). If a city and its bioregion can produce more local goods and services then local needs can be met with much less travel. Living communities which offer varied local economic, social and cultural possibilities will enable the inhabitants to live with less need for energy transport.

From another point of view social relationships are also very important elements of de-growth strategies to increase well-being (Andreoni – Galmarini 2014). Thus de-growth suggests to strengthen reciprocity in the economy and partially complement market economy with it where the production and exchanges of goods and services aim to improve cooperation, conviviality and social relationships. Reciprocity can be explained as a combination of subsidiary production principle and the concept of conviviality. Subsidiary production aims to satisfy consumption needs nearest to the production place. So it is important to change from long distance trade to local distribution chains, decrease environmental impact generated by human activities, increase

human health, make the product origin and quality traceable and improve trust between producer and consumer. Conviviality is defined as a kind of system of social relationships based on community support, social unpaid work, voluntary work, mutual aid, favour and community exchange, household and informal care work which aims to improve cooperation and social relationships. So reciprocity work is defined "*as time devoted to society in the form of self-production, voluntary work or mutual exchange of goods and services*" (Andreoni − Galmarini 2014, p 79).

According to Andreoni and Galmarini's (2014) model the combination of reciprocity and market work is able to increase the level of well-being and quality of life, have bigger effect on social capital generation and decrease the impact on natural capital depletion. The increase of social capital can be achieved by strengthening participation and democratic, collective control, and then a smaller size of economy can be controlled with it (Andreoni – Galmarini 2013). This re-democratization process will be able to improve communication between science, society and governance and increase cooperation.

4. Sustainable consumption

Sustainable consumption cannot be interpreted without sustainable production as consumers obviously buy what producers create, so an integrated approach is needed (Newman – Jennings 2008). Consumption and production processes should be brought together, they should be closer, as they are not separated in the ecosystem; and feedback loops should be restored between the city and its bioregion through regionalization and localization of economies. In order to move towards sustainability wealthy citizens of the world should reduce their resource consumption and the basic needs of the poor should be in focus. That is why we should reduce consumption and simultaneously change how we produce consumable products which is not only about technological changes according to strong sustainability theory (Málovics – Bajmócy 2009, Bajmócy – Málovics 2011). These processes would bring the power back to regional communities, so it would strengthen cooperation, equity, participation in the decision-making, responsibility for the health of ecosystems (Newman – Jennings 2008). With this end in view meeting genuine needs should be in focus, so social and ecological limits should be appreciated. Sufficiency is not synonymous with lack or with doing without but living life fully while taking

care of Earth and people who truly do not have enough. Hence it is very important to educate consumers, so they can be aware of their consumption's effects, so in this way their demand can be managed.

4.1. The means of de-growth

The changes following the principles of de-growth has already been started but sometimes independently from the de-growth model. Several attempts, means can be experienced which are certainly waiting to be improved, but a process has begun (Amate et al. 2013, Cattaneo et al. 2010). The steps for the implementation of the ideas of the movements can be grouped into four main categories, depending on which level of the society is affected: individual, community, national and supranational level. This is the point where scientific theories and movements continuously interact with each other, so there is no strict boundary between the two aspects. According to sustainable consumption mainly the individual and the community levels are important, so I introduce means on these levels but we should always keep in mind to deal with the production processes at the same time.

On the individual level the program can be described as a lifestyle, a form of life where the participant voluntarily takes on simplicity and a sustainable mode of life which does not mean asceticism, nor that from now he/she cannot have low-energy tools, cannot go for calm and relaxing holidays or cannot eat delicious foods (Kallis et al. 2012). The program does not mean the reinstatement of an earlier era of the history, but the realization of the principle "better from less" (Matthey 2010). As according to de-growth the residents of the global North (Europe, USA, Australia, etc.) over-consume in ecological sense (Princen 2005), those who live in the property-focused, western civilization need to take responsibility urgently for the environmental weight of their consumption and need to decrease in quantity and improve its quality. Reducing resource use does not mean reducing quality of life; moreover as a consequence it is about having more spare time, fun and joy.

Lorek and Fuchs (2013) call this as strong sustainability consumption approach which is opposed to eco-efficiency-focused weak sustainability consumption approach which is inadequate according to de-growth. We purchase goods and services not only for their functionality but also for their symbolic content; in fact, the motivation of the majority of our

consumption is the latter (Ropke 1999). Symbolic consumption helps in defining our social role, in self-determination, in forming self-image and it creates group-consciousness (Prónay – Málovics 2008). These three needs can be met in a sustainable way by consumer community consciousness and local community where the self-expression of the participants is based on the protection of the environment. At this point the expectations of consumers become relevant, where marketing has the most important role, as most of our needs are generated (Matthey 2010). It is important to strengthen our needs in a direction that less consumption could be enough and acceptable. Of course, this is not easy as beside the undeniable impact of advertisements other social-psychological, historical and social-technical factors influences the increase in our consumption – such as human envy, the hierarchical structure of the societies, customs, rituals, holidays, dreams, the strengthening individualization, certain tools (cars, mobile phones, television, etc.) have become almost compulsory for consumers, planned obsolescence of products and the consumption credit system (Ropke 1999). However, all of these do not change the fact: over-consumption in ecological sense threatens the ecosystem's carrying capacity, so it should be reduced.

On the community level mainly on local level members of smaller groups – like neighborhood communities or quarters, towns – should work on new cohabitation forms which can be production and consumption models for other communities or state organizations (Liegey et al. 2013). Thinkers of de-growth strongly believe in bottom-up initiatives. It is important to rethink the redistribution and the recycling of goods organized from the bottom (Schneider 2008) and to work on innovative models of local lifestyle which accept de-growth values, rejecting the current capitalist culture (Kallis et al. 2012). Developing a new monetary system could be critical to move the current economic system towards sustainability (Seyfang – Longhurst 2013). The launch of local, community (complementary) money could reduce the problems caused by the global financial crisis. In addition local currency hopefully helps to create new sense of local exchange system (Liegey et al. 2013) – others (Dittmer (2013) are sceptic about that local money could be efficient mean de-growth in practice. In order to re-localize production and consumption local supply systems should be encouraged (Liegey et al. 2013). Self-sufficient organizations, small-scale sustainable agricultural production, new forms of coexistence, community gardens, and every kind of attempt for new models of production, consumption and allocation which would serve the aims of de-growth should be supported. On community level, the model of

cohousing is promising where the goal is to make urban environment greener and more social so less estranged (Lietaer 2010).

Means are needed on national level also as bottom up strategies cannot be efficient without top-down actions (van den Bergh 2011). Consumption could also be reduced by re-structuring the taxation system. Advertisement tax – as media has a huge role – and other kind of taxes should be launched which serve the protection of environment and help the employment of human work force (Liegey et al. 2013). On supranational level appropriate community policy and multilateral agreements and their observance are needed regarding the reduction of pollutants and the appropriate resource use (van den Bergh 2011, Schwartzmann 2012). Our global environmental problems, the associated pollution, resource use and the use of common-pool resources have supranational scale, so one country cannot fix them on its own.

Summarizing, in order to organize sustainable consumption we should deal with the production processes at the same time in every level. Local food movements can be effective means on community level as they integrate both side of sustainability (Newman – Jennings 2008). In the rest of my paper I define shortly local food and local food systems. Then I make an attempt to create a possible evaluation framework for them from the aspect of consumers, and then I shortly introduce two case studies.

5. Local food movements

Local food movements help to create thriving bioregional and local economies, and to bring the processes of consumption and production together (Newman – Jennings 2008). They enable cities to consume more locally produced food, provide better, fresher food and can reduce transportation energy requirements. For example nowadays an average US plate of food has taken around from 2400 to 4000 km of transport energy to get on the table. After defining the notion of local food and local food systems, I make an attempt to create a possible evaluation framework for them from the aspect of consumers.

The notion of local is quite complex. According to Knight (2013) the definition of local food has five main dimensions:

- Geographical: local food arrives within a certain distance which can be from 1 to 150 km.

- Political: local food arrives within a community, region, state or province, or country, so manufactured in a local government unit and sold in that same local government unit or adjacent government units only
- Benefits and/or attributes: local food is convenient, healthy and sustainable, can provide a status, and preserve open space.
- Oppose to industrial or corporate agriculture: locals organize alternative social movements.
- Strengthen social relationships: generally between consumers and producers, but among consumers and among producers also.

There are many types of local food systems. In this paper I concentrate on local food systems around urban cities which can mean solutions for the main contemporary urban conflicts like social inequality and sustainability (Sevilla-Buitrago 2013). In order to achieve the goals of de-growth greater cooperation in the local level, deliberative decision-making and interdisciplinary conversation are needed (Bajmócy – Gébert 2014, Sevilla-Buitrago 2013). These kinds of initiatives serve sustainability, food security, health and well-being, protect the ecosystem and cultures, and aim to decrease social inequalities, poverty and malnutrition (Kuhlein et al. 2009, Kuhnlein et al. 2013). They aim to re-localize food production and consumption, and are committed to social, economic and environmental justice principles, although there can be some conceptual differences among the various kind of definitions (Feagan 2007).

- Alternative food networks "*seek ways to reconnect food producers with consumers while articulating new forms of political association and market governance*" (Hayden – Buck 2012, p. 43).
- Local food movements are *"based on social and cultural interests, which includes support for local foods, farmers, economies and the environment through the production, processing, distribution and consumption of local foods"* (Farmer 2012, p. 490). The supporters of these movements are not only interested in food but in changing *"our social fabric by strengthening rural and urban economies, revitalizing downtowns by increased patronage to the area, enhancing community and sense of place, as well as increasing food security and benefiting the environment through the production of agricultural products in*

a sustainable manner on lands that currently support a monoculture of commodity crops" (Farmer 2012. pp. 491).

- The Oklahoma Food Policy Council (2003, p. 3) defines local food system as *"a system where there are adequate opportunities and infrastructure for food producers to sell their goods to local people and institutions"*.
- Feenstra (2002, p. 100) defines community food system as *"a collaborative effort to build more locally based, self-reliant food economies – one in which sustainable food production, processing, distribution and consumption is integrated to enhance the economic, environmental and social health of a particular place".*
- Rights-based food systems „are democratic participation in food system choices affecting more than one sector; fair, transparent access by producers to all necessary resources for food production and marketing; multiple independent buyers; absence of human exploitation; absence of resource exploitation; and no impingement on the ability of people in other locales to meet this set of criteria" which can be achieved by *"facilitating food democracy and reducing environmental exploitation, primarily by lowering environmental costs due to long-distance transportation"* (Anderson 2008, p. 593).
- These alternative food initiatives, movements can have various forms: alternative agro-food networks and systems, community food security, civic and democratic agriculture, postproductivism, alternative or shortened food chains, community gardens, Slow Food movements, the 'quality turn' and the variety of other permutations (Feagan 2007).

5.1. Evaluating local food systems based on the basis of de-growth

First of all in order, to evaluate local food systems on the basis of de-growth it is important to make difference between those systems which would like to grow, scale up and export local foods out of the given location, region or would like to attract tourists, and those ones which would like to serve the locals only. The second one is that type which can serve the values of de-growth. There are five main aspects of a possible evaluation framework of local food systems:

- the consumers' side,
- the community's/society's side,
- the producers'/farmers' side,

- the environment's side,
- the transformative power of the system.

Now I concentrate mainly on the consumers' side but – as mentioned before – it should not be forgotten to handle the production side also at the same time. Moreover the environment's side should also be kept in mind that these initiatives have lower use of pesticide, lower greenhouse gas emission and energy consumption than multinational distributional systems or not, but according to the last two the results are not univocal (Coley et al. 2009, Mundler – Rumpus 2012).

On the consumers' side it is important if they are aware of that specific local food system which operates nearest to their cities, and if they have enough motivation to buy local foods (Knight 2013). Awareness, knowledge and understanding about local foods can be increased by effective campaigns, events and logo too. It is also important to recognize the barriers why consumers do not buy local foods such as availability, price or location. Willingness to pay for local foods usually is increasing as the travelled distance is decreasing – but it depends on how perishable the product is –, and as perceptions of freshness, taste, food safety and the support of local economy and environmental impacts are increasing (Grebitus et al. 2013). For consumers it is also determining that dealing with local foods can be a form of leisure time through an adopted food-style, recipe-sharing, shopping local foods, cooking, and eating them, and this kind of behaviour as a recreational experience (Farmer 2012). Another indicator can be if people eat healthier, more securely and thanks to it they have a better quality of life. As a productive consumer the purchase practice of restaurants and school's canteens should be examined also (Oklahoma Food Policy Council 2003, Sharma et al. 2014).

The last, comprehensive evaluation aspect concerns on the transformative power of local food systems, so which parts of the society are affected. Are local food systems able to address all kind of groups of society – from people with the lowest income to people with the highest income – in order to bring real transformation, or is it only a small elite who enjoys the benefits?

5.2. Case studies

Finally for illustration I introduce shortly two case studies: an Australian and an Italian. The Australian is about the potential environmental and population health impacts of local urban

food systems (Hall et al. 2014). The case study works with two methods: life cycle approach (with three indicators in it: global warning potential, land use and water use) and interviews, focus groups (which explore views from producers and consumers regarding social and cultural factors relating to environmental sustainability and food provisioning). There are two kind of products in the research: chicken and lettuce.

As this paper concentrates mainly on the consumers, now I introduce only results belonging to that part of this case study. With very few exceptions, participants purchased their chickens from large supermarkets, although some participants mentioned going to the butcher, one mentioned going directly to a chicken producer (factory outlet) (Hall et al. 2014). When discussing their chicken purchases and eating habits almost none of the participants mentioned the environment as important, although when asked about their waste methods, there was a trend among some consumers to minimize waste by using leftovers in new meals and the bones for creating stock or feeding to pets.

Lettuce consumers' answers to issues of environmental sustainability were more diverse (Hall et al. 2014). However, a minority of participants expressed environmental concerns, particularly concerning fruit and vegetable products. Some of these consumers expressed distrust towards food traveling long distances impacting on the quality of the product, such as its freshness. For this reason some consumers chose to purchase lettuce and other vegetables from the market and independent grocers, or grow their own. However, people who grew their own lettuce or used markets and independent growers were just to do it for reasons such as supporting the local grocers or a hobby for the kids, but not for environmental motivations.

The Italian research investigates the importance of the local attribute of food in three Italian farmers' markets, relating shopper and vendor data at the same time (Vecchio 2010). The study's methods are observational inspections of the markets, focus groups of shoppers, and semi structured interviews with vendors. As in the previous case study, I only concentrate on the results related to the consumers here too.

The main motivation for shopping at farmers' market is price but there are broad differences between the average annual incomes of the three markets' customers (Vecchio 2010). They also rated the local factor as their main incentive, and quality and freshness of the food products. The general interest in buying local foods is developing the community where they live and is supporting local farms. People approached local foods for the greater quantity of

information available about the production system and farm location. By contrast, consumers at the Potenza farmers' market showed extremely little concern for local foods. The role of food market as a source for local foods are high quality, traditional, regional products and dissatisfaction with modern distribution outlet policies.

Environmental concerns were not a strong factor motivating most producers' and consumers' behavioral patterns in either case study (Hall et al. 2014, Vecchio 2010). However, some motivating factors, such as efficient use of resources and desire for freshness, may have an unintended bonus of being beneficial for environmental sustainability in the Australian case (Hall et al. 2014).

So my consequence is that these kinds of initiatives can be good de-growth means but they need to be improved. As I have mentioned earlier we should handle sustainable consumption and production at the same time in order to move toward real sustainability. It needs very complex research to answer questions like whether people eat healthier or not, their food is more secure or not, and all together they could have reached an increased level of well-being or not. Also we do not know the transformational power of these initiatives, if they are able to decrease social inequalities, poverty, malnutrition and environmental problems. Certainly these two case studies are not enough to take the right conclusions, so there are many questions left to be answered and much to do as activists, but keeping in mind the de-growth values local food movements could help the transition.

6. Summary

In this paper I introduced the underlying thought of the theory of de-growth, and one of its main value: re-localization. Re-localization leaded to how to interpret sustainable consumption in this framework, and as a conclusion the production system cannot be handled separately from it. I illustrated sustainable consumption and production through local food initiatives. I made an attempt to create a possible evaluation framework for them from the aspect of consumers – but not forgetting the aspects of the producers – and introduced shortly two case studies. As a consequence we can say that local food movements can help to move towards real sustainability but there are still so many unanswered questions according to the topic.

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10. Difficulties of Enforcing Environmental Regulations in China

Ákos Uhrin

In our globalized world the Chinese economic performance plays an inevitable role. This spectacular economic growth, however, was coupled with never before seen economic damages, such as deforestation, decrease in drinking water quality, desertification and eroding maritime areas. In China, the environmental protection has got publicity back in 1974 for the first time; although it was not until 2006 when the government incorporated this issue into the eleventh five-year plan. From this moment on, environmental protection is represented on the highest levels. Despite, however, of the numerous laws regulating the environmental pollution of companies, the government is often criticized because the implementation of environmental laws seems to be rather poorly executed. This particular situation has contributed to the creation of certain level of dissatisfaction among Chinese citizen.

Present paper analyzes the available literature on the Chinese regulatory political background to a deep degree in hope of finding the reasons behind the presented controversial situation. It is found that authorities lack the means of enforcement while in the same time monitoring or supervisory system is not developed sufficiently.

Keywords: China, environment, pollution, legal regulations, interest promotion.

1. Introduction

The pollution is generally manifested in the fact that from time to time dark clouds of smog descends on the eastern coast cities reducing the line of sight with a significant amount and completely obscuring the sun. Although the health effects of such a situation are well-known, the situation does not seem to improve. Not even in spite of the environmental regulation that got stricter since the beginning of the eleventh five-year plan. This opens the questions of why this could be happening. To conduct this study and trying to answer this problem the contemporary institutional and legal background is described, aiming to unfold the routes of interest promotion and conflicts behind the framework of the Chinese institutional web. Since local enterprises are the main contributors for pollution, their role in the institutional framework is discussed as well.

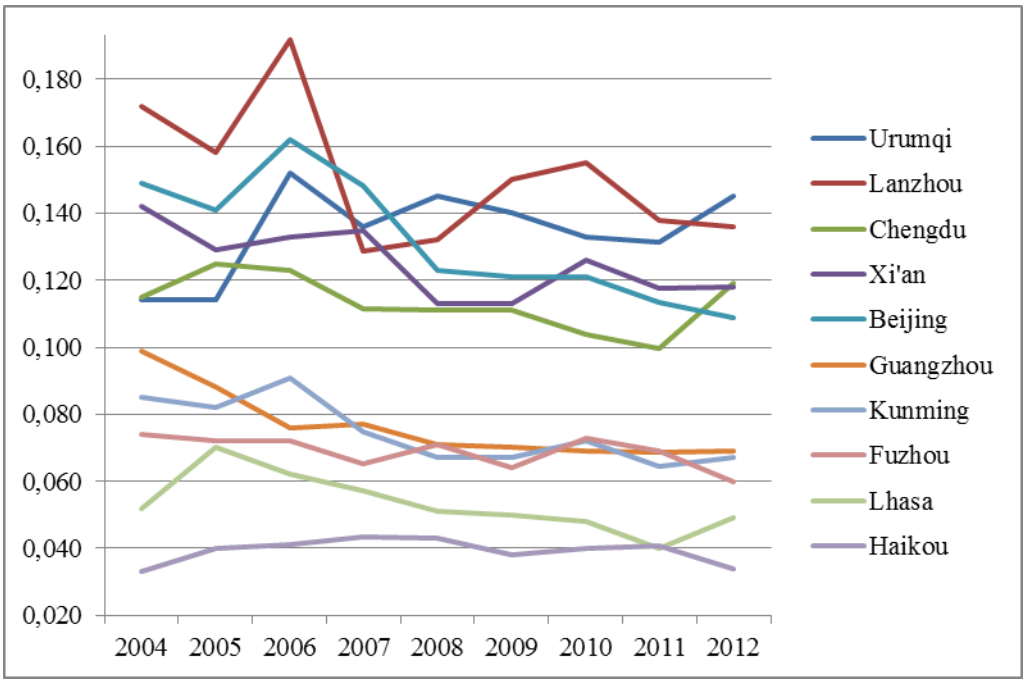
One reason that everyone thinks first might be identified in the pursuit of economic growth. Since industrial production (mainly the building industry and transportation sector (see for example He et al. (2013), Zhou et al. (2014)) is simultaneously the main source of pollution, and the engine of growth, it is feared that the rigorous enforcement of environmental regulations could undermine the increase in economic performance that is

based on cheap and abundantly available workforce and underdeveloped environmental regulatory system (Chen − Wang 2014). Thus, a dual interest in the Chinese economic and political web can be pinpointed: on the one hand, the severe environmental situation should be improved. On the other hand, however, the need for growth also has to be taken into account: without growth China would not be able to assign work for people who just got into the working age and ultimately this could lead to an additional set of problems that are, however, not discussed here. Because of this there is no real incentive – except for the natural health, of course – for enforcing the environmental regulations. The problem is, however, more complex than the one presented here and in order to comprehend all the details, further discussion about the Chinese political and institutional web is necessary, as well as the role of the environmental protection throughout history needs to be assessed. At the end, it is hoped that a comprehensive view is provided and the role of local level enterprises in this framework is understood.

2. History of environmental protection in China

Since 2013 there is a growing amount of press coverage concerning environmental pollution. It is not surprising that to some extent policy makers had to react on the increasing pressure from the society, so they not only show more commitment to environmental problems, but also issue a set of laws regarding the protection of environment (Beyer 2006). It is subject to controversy, though, that in spite of the growing amount and increasing quality of environmental regulations, the numbers concerning the state of environment are not even close to the healthy value, although there are some improvements (Watts 2005). One of the major and inevitable indicators is the PM2.5 and PM10 that measures the particulate matter in the air. Based on the World Health Organization's guidelines, an annual mean of PM10 of below *0.020 milligrams* is regarded healthy (WHO 2005). In the major Chinese cities – despite the values have plummeted – the figures are way above the threshold, even in case of the less polluted cities (Figure 1). There is a document published in 2010 that tries to tackle this special environmental-related problem and promote sustainable growth by making local industries reduce their pollutant emission to be in line with the so called *Grade 2 Standards* (State Council 2010), Latter tries to force local industries to reduce their pollutant emission to be comply with the guidelines published in Grade 2 Standards. But based on what is experienced, its effects are dubious (Figure 1).

Figure 1 Particulate Matter (PM10) concentration levels in top and bottom five major cities in China between 2004 and 2012 (milligrams)

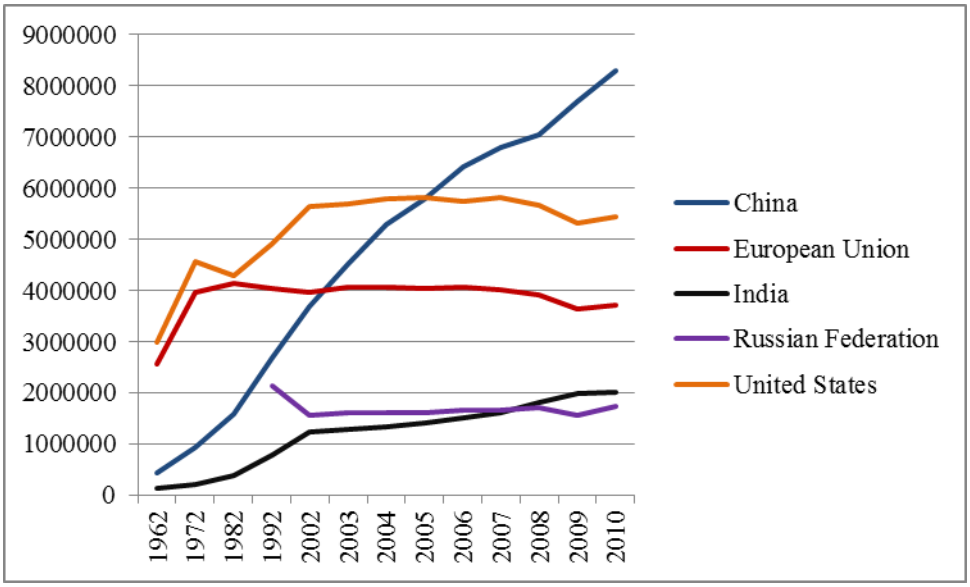


Source: Chinese Statistical Yearbook (2013)

Although smog, thus particulate matter is the most noticeable sign of environmental pollution because of its ability to form smog in the urban areas, several other, more elusive aspects of environmental degradation should be addressed. CO_2 is the most common elements in the atmosphere that researchers talk about in case of climate conferences. Although China is a ratifying member of the Kyoto Protocol Doha Amendment of 2012, which is by far the most famous international treaty aimed to decreasing man-made carbon-dioxide emission; the country did not target any certain level of CO_2 reduction (UN 2015). CO_2 levels have been relatively steady in the industrialized countries, while India managed to tenfold its emission.

The most noticeable increase in CO_2 emission occurred in China and this growth seems to be even more sharp since the recent economic crisis, although small increases have followed in case of the other countries as well in the same time period. Chinese carbon-dioxide emission came into spotlight in 2005 when the country' s emission exceeded that of the United States of America's (Figure 2).

Figure 2 CO_2 emissions of the top 5 present day emitters from 1962 to 2010 (kilotons)



Source: Worldbank (2015)

So far, the pollution situation related to the emission of CO_2 of China in comparison with the world top pollution countries was described. Before going any further, one should take a deeper look at the Chinese power structure. It is hoped that one will have a contextual understanding about why it seems to be so difficult to promote environmental interest in China.

3. Chinese power structure

To get a more comprehensive picture about the legal ways of environmental protection, it is worth taking a look on how laws are formulated in China. First of all, Chinese administration is relatively decentralized: There is a local version of almost every central level authority, which is responsible for their own level and one level upward. Altogether there are five levels. In the central level, the National People's Congress (NPC) is in charge of deciding about basic laws (Potter 2013). Because members of the NPC meet only once a year, the majority of the laws are issued by the Standing Committee that is the substitute body of the National People's Congress. They meet every two months with the goal of formulating laws and regulation in accordance with the basic laws issued by the upper body (Beyer 2006). NPC's work is influenced to some degree by the Political Consultative Conference, where the

allied parties[15] are able to promote their interest (CPPCC 2014). In this context, the environmental-related regulations are administered by the Ministry of Environmental Protection (MEP) since 2008 (MEP 2014) which answers for the State Council, which is the highest administrative body of the government, usually referred to as the executive branch.[16] Ministries are answering for the State Council itself.

The Communist Party of China has the ultimate say in every important issue, may they be local level or central level issues. The party initially followed the Soviet model, but later they split up and established the Chinese way of socialism, that is, the "socialism with Chinese characteristics" (Dirlik 1989). The main organ of the party is the National Congress that has a session every five years; their role mainly lies in setting highest level policy targets. During the time in between, the Central Committee has sessions once a year and is responsible for the same duties. The everyday tasks are carried out by the Politburo and its Standing Committee. The leader of the Communist Party of China is the General Secretary who is also the Head of State and the chief of the Central Military Commission that is thus under direct control of the party (McMillen et al. 2000). There are local level organizations as well, controlled in the same way as the other local organs of central authorities (dual way). There are, however, some areas where the Communist Party has no or less power. Such as in case of Hong Kong and Macau where the CPC is not part of the government or in case of the autonomous provinces, where – based on Soviet practice – the leader is local, but the party general secretary is of Han Chinese origin, though. In this case, as already explained above, party power can be maintained to some degree (CPC 2007).

Regarding the role of NGOs, prior to the 1973 establishment of the first environment-related organization in China at the central level, environmental protection was regulated by

[15] There are eight allied parties that are allowed by the CPC. These are included in the United Front that is the name of this group of parties, which includes Revolutionary Committee of the Kuomintang (中国 国民党革命委员会), China Democratic League (中国民主同盟), China Democratic National Construction Association (中国民主建国会), China Association for Promoting Democracy (中国民主促進会), Chinese Peasants' and Workers' Democratic Party (中国农工民主党), China Party for Public Interest (中国致公党), September 3 Society (九三学社), Taiwan Democratic Self-Government League (台湾民主自治同盟).

[15] Here it is worth noting that China is dissimilar to the modern European governments. The branches of power are not separated like in the Western democratic countries. This is because of the party state nature of China, where the Communist Party of China is interweaved with the whole state apparatus. This is why China is often referred to as a party state (e.g. Csanádi, 1997, 2006).

[16] Here it is worth noting that China is dissimilar to the modern European governments. Since the Communist Party of China is – directly or indirectly – in charge of selecting most political and economic targets, it is quite hard to differentiate between the branches of powers. This is why China is often referred to as a party state.

the state without any environment-related interest promotion (Ma − Ortolano 2000). Initial environmental authorities were unsuccessful because of the lack of their expertise and China's isolation in the 1970s and 1980s (Jahiel 1998). The first environmental NGOs appeared only in the second half of the 1990s (Ho 2001). There are two types of environment-related organizations in China (Mol − Carter 2007).

Since 2007, enterprises are also able to promote their interest by taking part at the meeting of the CPC Congress every five year. They are private funded business enterprises, who account for around 1% of all members, although, their number is increasing. According to Asianews (2012), being delegated as a businessman to the highest political congress of the party has only one simple requirement: a well-organized party cell in the given company. It is thought that by this the CPC wants to maintain control over the private sector with the stated goal: building a harmonious society (China.org 2006). In order for the businessmen to be represented at a higher degree, there is much to be done, though. Their 24 seats only account for a tiny fraction of the 2270 seats of the CPC's Congress.

It has been observed that in a country where the state and party power cannot be separated directly, interest promotion possibilities of the given organ in the power structure (or net) play an important role. This situation can be derived from the fact that countries ruled – ultimately – by one single party the bureaucracy seems to be overgrown simply for the reason that the party state wants to be at the helm of everything (Bunce − Csanádi 1993). In such a power structure the multiple opportunities of interest promotion cannot be neglected. As Csanádi (2006) points out in this network of allocation of resources there are different and a high number of dependency lines. This network constitutes a hierarchy where the higher position comes with more resources and interest promotion possibilities. In this relation, some the upper level unit provides resources to the lower unit in exchange for interest promotion. Thus, an interdependent relation is established. The interchanging actors are captured by the dependency lines. These lines cannot be broken afterwards, because it is necessary for both actors. As explained, there are times, however, when resources become scarce. This is referred to as hard budget constraints. When a unit in the power structure becomes deprived from resources (maybe because they failed to allocate the input via their dependency lines), they are facing a hard budget constraint, which means that the long-term survival of the line is endangered (Csanádi 1997). In a party state like China this process can be selective, whereby the hard and soft budget constraints are "allocated" at the highest levels, having a *structural* nature of reproduction (Csanádi 2006).

Nonetheless a whole system can come to a hard budget constraint. When this happens, the interdependent lines are broken and the loss of cohesion of the structure as a whole will be observed. Unless the dependency lines are re-established taking the new constraints of budget into account, the system as a whole might become subject of transformation, i.e. self-consumed, such as in case of Hungary in the 1990s (Csanádi 1995).

For more information about the Chinese power structure see Attachment 1. So far, the institutional background of the environmental protection was discussed.

4. The history of environmental protection in China

Since choking smog is increasingly common in urban areas, Chinese government has taken many legal steps for containing pollution and converting the Chinese path of growth to a more sustainable one (Hong et al. 2013). These actions culminated in the formulation of the 2005 Law on Renewable Energies that set a target for using energy from renewable sources up to 16% by 2020 (Lo 2014). The current level, however, accounted for no more than 9% as of 2014 (Statistical Yearbook 2014). In 2008, the Chinese government decided on the establishment of a ministerial level body (Zhang − Wen 2008), which main objective was set to deal with environmental issues, such as prevention and current issues, including nuclear safety (Mol and Carter 2006), as well as formulating environment-related national strategies and guidelines (MEP 2014). On the other hand, this has been a very long process that consisted of multiple phases (Table 1).

Table 1 Main stages of Chinese environmental protection

Name	Abbreviation	Year of establishment	Answers to
Environmental Protection Office	EPO	1974	State Council
Environmental Protection Office	EPO	1982	MURCEP
National Environmental Protection Bureau	NEPB	1984	MURCEP
National Environmental Protection Agency	NEPA	1988	State Council, autonomous
State Environmental Protection Agency	SEPA	1998	State Council, autonomous
Ministry of Environmental Protection	MEP	2008	Ministerial level, autonomous

Source: own construction based on Wang et al. (2003), Beyer (2006), Mol − Carter (2006), MEP (2014)

Regarding the institutional background of environmental protection it is worth noting that China had a millennia old legacy that ensured the harmonic coexistence of men and environment by cultivating on a sustainable level, using only as much as they needed. This, however, had been changed in the second half of the twentieth century when China embarked on the road of industrialization. The state of the environment had been degrading with a fast tempo, and it was not until the 1970s when decision makers realized that the burden that the industrialization put on the environment is too high and that some aspects had to be changed. The year 1973 marks the date in the Chinese political history when environmental protection emerged: initially, in insignificant governmental bodies but from 1974 onwards its importance gradually increased and ministry level authorities assumed the task. Based on Wang–Morgan–Cashmore (2003), Beyer (2006) and McElwee (2011), the process of development may be divided into six periods.

1. The First National Environmental Protection Conference was organized and held and the establishment of an environmental protection committee was agreed upon. This was realized in 1974 and was called Environmental Protection Office (EPO). The EPO used to be directly subordinated to the main executive body, the State Council, and had a dual goal: firstly, it was responsible for postulating best practices regarding environmental protection that the county and city level authorities could follow, secondly there was a need for an environmental protection basic law that was formulated in 1979 and entered into force in 1989, as it has been already mentioned.

2. In the second stage, from 1982-1984, the role of environmental protection was pushed into the background. The EPO was combined with another authority, creating the Ministry of Urban and Rural Construction and Environmental Protection (MURCEP). The loss of priority emerged in the fact that this organization was no more sub-delegated under the State Council, so environmental protection interests needed a longer path to be promoted.

3. It was not until 1984 when the powers of the EPO under MURCEP were broadened. First, it was renamed to National Environmental Protection Bureau (NEPB) and its goal was determined in postulating new laws in accordance with the provisionary environmental protection law (remember that the EPL entered into force only in 1989).

4. The next big step in the development of China's environmental protection structure occurred in 1988 when the NEPB was finally detached from the MURCEP and full

autonomy[17] was provided for it. Despite of this favorable development, China still lacked the existence of a ministerial level environmental protection organization. Nonetheless the above described newly established autonomous body was called National Environmental Protection Agency (NEPA) and it answered directly to the State Council again. In contrary to the previous version of this institution, with the newly provided political autonomy, NEPA was able to formulate laws and find solution for environmental problems that emerged in the meantime. NEPA was rather active on its ten-year course. Many of the laws that are currently in force regarding the protection of environment were formulated by the NEPA (e.g. Law of the People's Republic of China on the Protection of Wildlife (1988), Water Law of The People's Republic of China (1988), Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution (1995) or Law of The People's Republic of China on Water and Soil Conservation (1991) (MEP 2014)). Just after one year of NEPA's existence, by 1989 most of the local level governments had established an EPA that were responsible for promoting local environmental protection interests (more or less successfully, since big projects required an environmental impact study that was manipulated in favor of the investment of local enterprises). Nonetheless, following a ten-year probationary period, the EPL entered into force in 1989.

5. The favorable path of the environmental protection continued in this period. In 1998 the NEPA's powers were extended and under its new name (State Environmental Protection Agency – SEPA) its goal became to supervise ongoing projects and if necessary, suspend their implementation until the environmental impacts are assessed properly. This was the first organization in the environmental institutional history of China that made efforts in order to enforce environmental laws. The reason behind the latest was that even though China had regulations regarding the state of the environment, no authority really took responsibility to enforce them (probably because of the pursuit of economic growth).

6. Ten years after the establishment of SEPA, the first ministry level authority for environmental protection called Ministry of Environmental Protection (MEP) was created in 2008. Its goal was determined in establishing nuclear safety (Mol − Carter 2006) and formulating environment-related national strategies and guidelines (MEP 2014). The work of the MEP is assisted by local level EPBs that can be found in all four local levels of Chinese

[17] Autonomy here means that in theory, autonomous bodies are not subordinated directly to any other Chinese authority but the State Council, making it possible proposals of the autonomous institutions in China can be directly accepted by the National People's Congress without the need of any other supervision process.

administrative divisions[18]: province, city, town and village levels (Beyer 2006 et al. 2006). These authorities are widely criticized but it is going to be discussed about only later on this chapter. The path of the environmental protection from an insignificant office to a ministry level authority is illustrated in Table 1, at the beginning of this section.

To comply with the research question in the beginning of the paper, the obstacles of enforcement of environmental laws and regulations are to be presented.

5. Obstacles of environment-related regulations' enforcement

In China, environmental regulations need to be in accordance with the 1989 Environmental Protection Law (EPL) that is a basic law. It was formulated in 1979 with provisional nature and took its final form in 1989 when it also entered into force (Bayer 2006). Because the spectrum of the EPL is very wide, it does not strike as a surprise that many environment-related issues have been covered so far. Since its establishment altogether 149 laws, regulations and interpretations have been issued (MEP 2014). These laws, however, tend not to be executed by government authorities or applied by local enterprise. Reasons behind this can be grouped into two groups. On the one hand, mostly because of the authoritarian style of the government, the civil society seems to be too weak to step up in order to promote their rights (Zhang − Wang 2013). This is also due to the Confucian heritage, namely that the Chinese society is regarded as a rather closed, collectivist one, where there is not so many place to promote own interests (Liu et al. 2012). In addition, the lack of real green NGOs (the situation regarding NGOs is described above) is not a fruitful situation either (Unger 1996). To further weaken the otherwise positive role of the presence of the NGOs, in China, no civil organization can exist without the consent of at least one party officer, who also exercises controlling rights in the NGO (He et al. 2014).

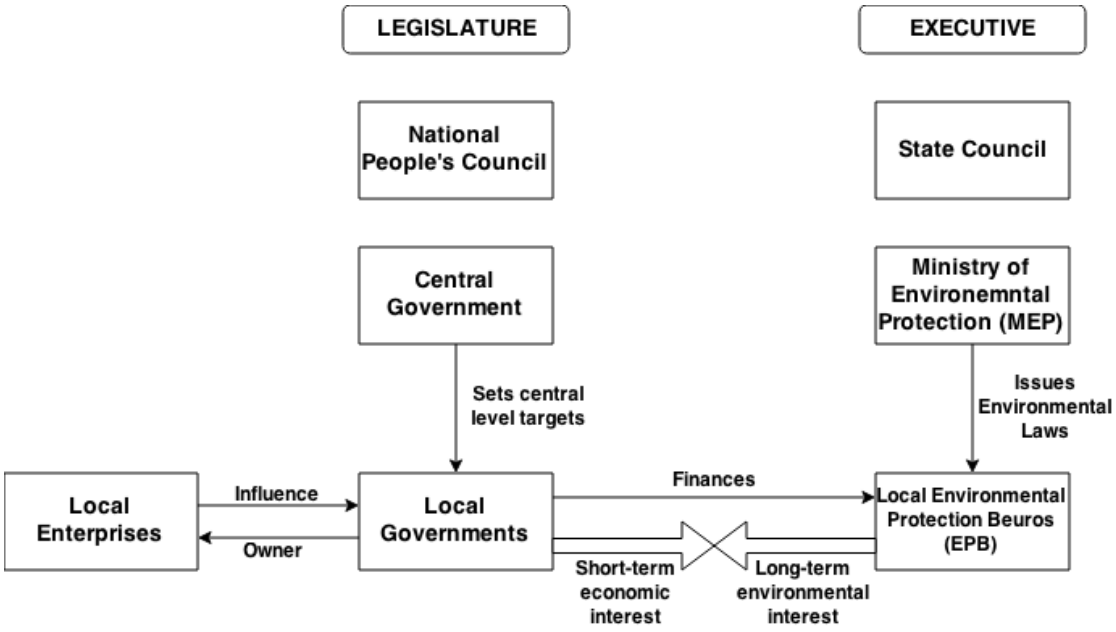
On the other hand, this picture is further rendered by government-side shortcomings, such as the lack of a proper monitoring system, which would allow government authorities to supervise the implementation of an economy related law (Xie et al. 2011). Even if a company wanted to comply with the law, in many cases the infrastructural background for it is not created. As agreed upon by Beyer (2006), even if a law required a company to incinerate the

[18] The Chinese administration has five levels. From top to down they are the following: central, provincial, county, city and township levels. Usually, each central level authority has their corresponding local level unit. Local levels are responsible for the local level, and one level up. For example a county-level authority is responsible for the county level authorities, and the province level authority of the same body (Xu 2011).

waste they had produced, sometimes there is no waste incinerator for disposal, therefore the company cannot discontinue disposing the dangerous waste in the nature. Also, as Kostka et al. (2013) explain, in many occasions, information does not get to the leaders of the company, so that they remain uninformed about possibilities for enhancing for example energy efficiency. A detailed explication of the obstacles of the enforcement can be found in Figure 2.

This adverse fact can be contributed to the central government's shortcoming that it is unable to promote its interest in local levels. Beyer (2006) and Liu et al. (2012) explain that China is a single state where the laws are issued on the central level, thus there are cases when local governments' interests are not taken into consideration (regarding the diversity of China this is not a wonder). They argue that China is too centralized (one size does not fit all).

Figure 2 Interest conflict between growth and environmental protection



Source: own construction based on Beyer (2006), He et al. (2014), Zhang and Wang (2013)

Figure 2 explains an interest conflict between local governments and environmental interest promotion. The relations in the figure are not so implified, for the precise version, please see Attachment 1. The current adverse situation arises from the fact that there is a too strong interest connection between Chinese small and medium size enterprises and the local governments (He et al. 2014), so often the local enterprises are pardoned upon. A reason behind this attitude can be that the industrialization of rural areas has coupled with a significant increase in GDP growth, thus increasing living standards in the area in concern. Zhang and Wang (2013) argue that governments want to prolong the positive effects, thus

turning a blind eye on the environmental pollution. Therefore, two conflicting interests exist at the same time: 1) the short-term interest of the economic growth and 2) the long-term interest of the sustainable development that takes into account the role of the environment as well. This interesting picture could have implications regarding agency theory as well, as proposed by Eisenhardt (1989). This consists of the principal-agent relation often referred to as the agency problem. The idea is about the situation where the principal (the MEP) entrusts the agent (local level authorities) to carry our tasks, but the agent acts on their own self-interest, rather than the principal's. Should local governments have an incentive to carry out environmental regulations, it could affect production and for this reason the Euro-China trade as well, due to the possible decrease in production.

6. Summary

Present paper tried to examine the obstacles of enhanced enforcement of environmental laws and regulations regarding local level enterprises as the main contributors in pollution. Findings suggest that governmental authorities have shortcomings regarding monitoring system and there is no real incentive at local levels to sacrifice growth for environment (pursuing economic growth is a more viable solution). Also, the way interest is promoted in China has a very special characteristic that may also contribute to the current situation. Furthermore, the millennia old social structure also results in conserving the adverse environmental-economic system. Ultimately, it can be concluded that short-term interest (rapid economic growth) is more powerful than long-term interest (environmental protection and sustainable growth).

Possibilities for a future research: So far, the interest conflict between short and long term economic growth was revealed, as well as the local level enterprises' role in the institutional background was briefly discussed. It, however, could be of special interest to discover what kind of implication all of the above has on the Euro-China trade relation. Since trade is one of the main motivators nowadays for bi- and multilateral economic partnerships, it can be promising to find out how economic and trade relations are affected by the changing (environmental) regulatory background in China. From this perspective, a future research on this topic could be investigating, whether European managers, thus Euro-China trade, are affected by the possible changes in China's environmental enforcement or regulatory background. For this to achieve, the DELPHI expert panel method could be of great help. This methodology has been proven to be effective in case of information systems research

(Brancheau et al. 1996). The method itself is used for structuring a group's communication process and its aim is to reach a consensus among experts' opinions, usually applied for a complex problem, so that the best solution could be applied. It can be used either for forecasting future scenarios or establishing a concept framework (theory building, like in case of this option). To carry out the research, experts are asked for their opinions multiple times, during which individual opinions may be the subject of change, iterating among experts (Smidth 1997).

The method starts with setting up research questions, which the researcher expects the experts to come to a consensus on. In this case, the questions could be the following.

What kind of implications do environmental protection-related regulations have on the Euro-China trade flow?

What are the sectors of trade that might be affected the most, if a sudden change in China's regulatory environment or in the way of implementing environmental laws were to happen?

What are the main considerations that European managers take into account when it comes to environmental pollution?

Selecting the experts has a key role in this methodology. According to Okoli and Pawlowski (2004) four panels, each of them containing ten experts should be enough to reach a high degree of consensus. First, they need to be contacted by e-mail, phone or fax and once selected, the researcher asks for their word that they are willing to participate in the study. Experts can come from any field, including academics, practitioners, government officials and officials of NGOs. A well carried out DELPHI study usually consists of up to six rounds. In each round, an up to fifteen minutes long questionnaire is handed out to the experts and is expected to be returned within one week. After the rounds of iteration, the researcher ranks the relevant factors and a consensus is expected to be established. With this methodology it is expected that the questions regarding Euro-China trade can be answered so that a contribution to the scientific literature can be achieved on the Euro-China trade considering environmental protection relations.

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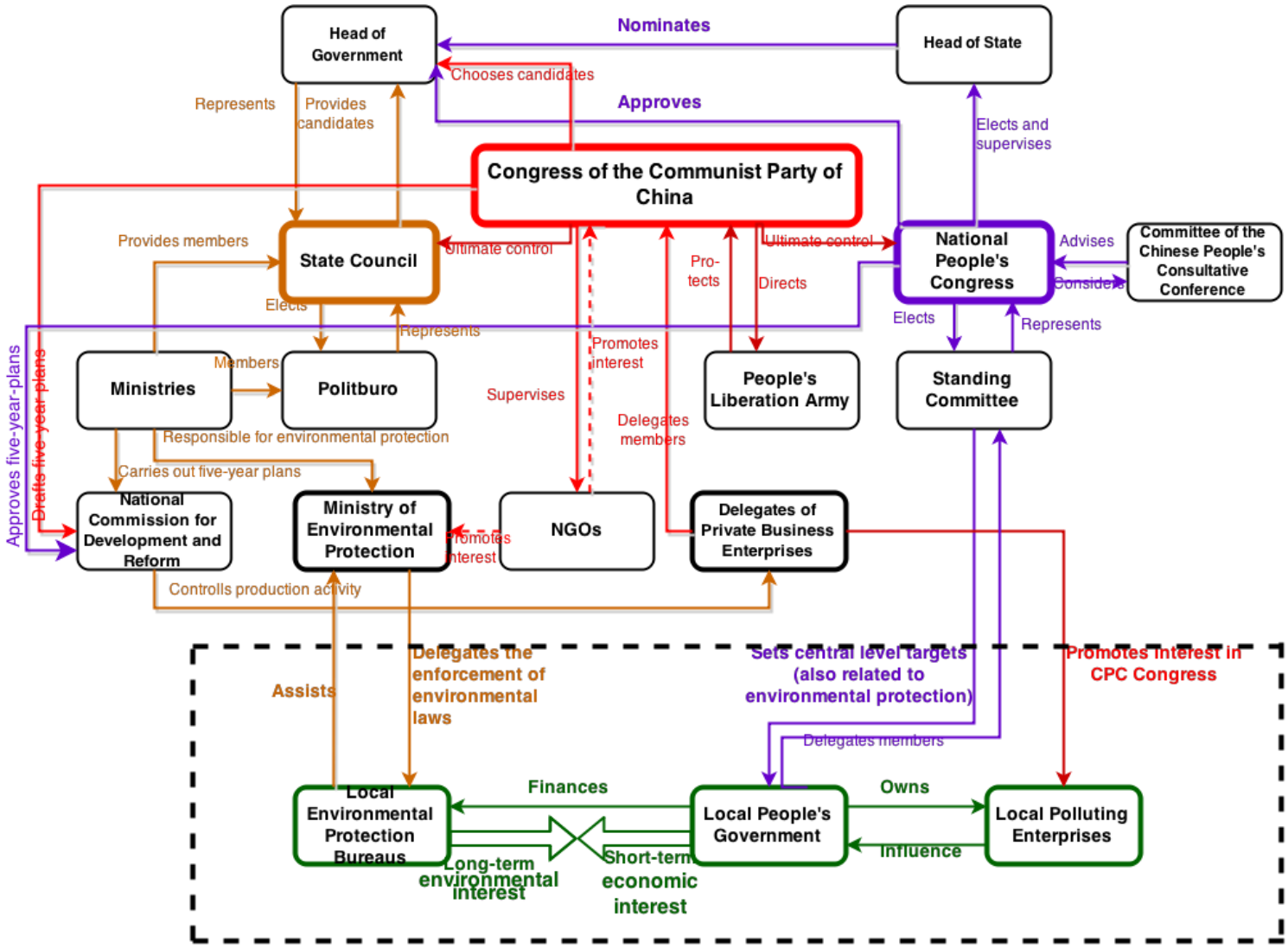
Appendix 1 Power structure of China



Source: own construction

PART THREE

Financial Management and Management Challenges

Hetesi E. – Vas Zs. (eds) 2015: *New Ideas in a Changing World of Business Management and Marketing*. University of Szeged, Doctoral School in Economics, Szeged, pp. 143-163.

11. Fundamental Analysis – Portfolio Management Tool

Horatiu Regep Dan

The complex process of selecting a portfolio of financial instruments takes into account a particular investment objective, risk aversion of the investor, but also the impact of endogenous and exogenous factors on the evolution and return of the financial instruments.

The central point of this paper is the selection of a portfolio of financial instruments based only on financial descriptors for the insurer's financial status In the first phase, we proposed and tested a statistical model aimed at the connections between the financial statements descriptors of issuers and the market values return of stocks issued by them. Thus, we identified those descriptors, which in the period under review (2010-2013), had a direct impact on the dynamics of stock prices traded on the capital market in Europe and USA. We analyze companies that are part from the structure of Down Jones Industrial Average, WIG 20 and Euro Stoxx50. In the second stage, we calculated the return of the selected companies on the selected period by using investment signals based on fundamental analysis. The main results support the idea that an investor can have a portfolio that generates returns by using exclusively financial descriptors.

Keywords: financial descriptors, investment portfolio, fundamental analysis, investors

1. Introduction

The objective of the paper is to illustrate that the use of fundamental analysis is useful in its depiction of the business environment and in guiding the selection of financial asset portfolio structure decisions. In order to illustrate the possibilities of application of fundamental analysis in the construction and management of financial assets portfolios, we propose a methodology capable, on the one hand, to reflect the current financial status of the issuer and, on the other hand, allow evaluation of the impact of this status of the transaction value of financial assets issued.

Fundamental analysis reveals its usefulness especially for passive trading strategies involving "long" trading horizons. To implement active trading strategies on "short" trading horizons it is necessary to take into account additional information generated by technical analysis, possibly as part of a mixed approach such as "environment/trigger". Moreover, such an approach should be complemented by a detailed analysis of the sector characteristics and macroeconomic situation.

2. Fundamental analysis – literature

Fundamental analysis origins may be dated from Graham and Dodd's (1934) work, in which the authors claimed the importance of fundamental factors in shares' price evaluation. In theory, the value of a company, and as a result, the price of shares, is given by the sum of the present value of future cash flows discounted by the risk adjusted discount rate. This conceptual assessment framework is based on dividend discount model developed by Gordon (1962). However this model assumes estimation of future dividends, which is rather difficult to implement due to changes that may occur in the dividend policy of companies. Thus, further studies along this line of literature focused on the cash flows, which are not affected by the dividend policy and can be obtained in the financial statements.

Ou and Penman (1989) use financial statements analysis and analysis of ratios deriving from the statements in order to estimate future revenues. The main motivation for this research is to identify wrongfully valued shares. These authors demonstrate that the information from the revenue signals estimates are helpful in generating abnormal gains on shares.

Fama and French (1992) show that value stocks (high book/market) significantly outperform growth stocks (low book/market). The average return of the highest book/market decile is reported go be one percent per month higher than the average return for the lowest book/market decile.

Jagadeesh and Titman (1993) show in their work that in a three-twelve months timeframe, investors who have previously earned still exceed, on average, investors who lost in the past, by 1% per month.

Lev and Thiagarajan (1993) use conceptual arguments to study their ratios. They demonstrate that the earnings prediction signals in variables like growth in accounts receivables relative to sales growth and gross margin rate are incrementally associated with contemporaneous stock returns and are significant in predicting future earnings.

Joseph. D. Piotroski (2000) examines whether a simple accounting based Fundamental Analysis strategy, when applied to a broad portfolio of high Book to Market firms, can shift the distribution of returns earned by an investor. The research shows that the mean returns earned by a high Book to Market investor can be increased by at least 7.5% annually through the selection of financially strong high Book to Market firms.

Pascal Nguyen, (2003) constructs a simple financial score designed to capture short term changes in firm operating efficiency, profitability and financial policy. The scores

exhibit a strong correlation with market adjusted returns in the Current fiscal period and the same continues in the following period also.

The unique nature of the instruments of the capital market force investors to depend to a large extent on fundamental factors in their investment decisions. These fundamental factors relate to the economy as a whole, or a particular industry or a company. One can say that the shares' performance depends on the issuing company's performance. However, since companies are a part of an industrial sector, which in turn are part of national/global economy, it may also be noted that macroeconomic or industrial factors are likely to affect investment decisions. Selecting an investment will begin with fundamental analysis, which analyzes the economic environment, industry and company's performance.

Fundamental analysis involves examining the factors influencing the evolution of the economy, industry or company. The purpose of fundamental analysis is to predict stock price developments for making investment decisions. At the company level, fundamental analysis may involve examination of financial data, of management, business concept and competition. At the industry level, there could be an analysis of demand and supply of the products in that specific industry. With regards to the national economy, fundamental analysis might focus on economic data for evaluating that economy.

To estimate the evolution of stock prices, fundamental analysis combines the analysis of the economy, industry, and the company to determine the intrinsic value of the share. If the intrinsic value is not equal to the current market price, it is assumed that the shares are either overvalued or undervalued. Because the share's market price at one moment tends to be around its intrinsic value, then the latter should underpin the decision to invest or not, the investor seeking to exploit discrepancies between the market price and the intrinsic value.

Conducting fundamental analysis involves 3 phases:

- Analysis of the companies' macroeconomic environment
- Analysis of the evolution of companies' industry
- Analysis of the companies based on financial statements and future financial performance

Investors assess the evolutions of the economies, and taking into account the results they evaluate the industries. Based on both analysis (economy and industry), investors conduct microeconomic analysis of companies. Also, this approach allows comparisons between different groups of industries, namely comparisons between different companies in the same group.

The general idea of fundamental analysis is to identify undervalued companies by analyzing the intrinsic value based on the financial statements of the company. These financial statements are used to calculate a number of financial indicators to reach some conclusions about the company's liquidity, leverage, profitability, etc. Financial indicators help interpret the results and allow comparisons of present evolution of a company with previous years, other companies or with other sectors.

3. Methodological framework

The methodology that we propose involves the following steps:

1. evaluation of economic and financial position and performance of issuers;
2. testing the connections between a synthetic describer of financial status of the issuers and the development of the market value of financial assets issued by them and traded on the capital market, respectively,
3. using the results generated by this analysis in generating trading signals and proper management of portfolios of financial assets.

1. The first stage involves illustrating the financial status of the issuers, which involves choosing the describers that capture all the various defining dimensions of this status. These describers can be reflected in ratios which are specific to financial statements analysis of issuers. In selecting these ratios it is necessary to take into account the business environment particularities and global macroeconomic situation. Also, sector-specific features, production and commercial processes cycles, the degree of access to borrowed financial resources, specific business strategies and economic and financial performance of the issuing companies should be reflected in an appropriate manner by the chosen ratio system. Another problem is linked to locating the information used in the construction of a synthetic estimator of the overall financial status, therefore we can distinguish between: a) endogenous information located within companies, respectively, b) exogenous information that allow connecting the results from the activity of companies and the development of the transactional value (market price) of these companies. To answer such requirements, even partially, we have considered the following ratio system mentioned in table 1.

Table 1 Expected effects of financial ratios

No.	Financial ratios	Expected effect	Observations
1	Long-term liabilities ratio	+/-	It signifies the issuer's ability to attract stable financial resources
2	Debt ratio	-	It reflects a decrease of financial autonomy
3	ROA	+	It reflects the issuer's financial and economic performance, its ability to generate positive results of the work
4	ROE	+	
5	EPS	+	
6	Dividend/share	+	It reflects the remuneration of investors
7	Financial leverage	-	It reflects the issuer's capital structure and its dependence on financial resources attracted from third parties

Source: own construction

In order to build a synthetic describer of financial status we appeal to the methodological framework provided by the "principal component analysis". This factor analysis technique reduces the number of variables by identifying the structure correlations between them. Building "principal components" is made in such a way that they are able to explain a large fraction of the total variance of the variables considered. The construction algorithm starts from the assumption of a single "principal component" and tests the level of discrepancies between the observed correlation matrix and the one estimated by linear model involved. If these discrepancies are too large, one should proceed iteratively estimating a "principal component" until the discrepancy tests show that differences between the observed correlation matrix and the estimated one are at a palatable level in statistical terms. The first "principal component" extracted explains most of the total variance observed. This component will be used in the construction of the financial status synthetic describer (financial).

2. The next step is to test connections between the financial assets' price dynamics and the synthetic describer constructed in the previous step. The model we consider is non-linear, specifically we argue that the effects of the financial status improvement on price dynamics is not linear: such improvement leads to an increase in the interest shown by investors for holding financial assets until achieving a "critical threshold". Beyond this threshold investors may consider that the anticipated growth potential of the issuer's financial and economic performance is "decreasing". Therefore it is possible that the overall effect observed to be one of "inverted U curve", in summary:

$$p_{i,t} = \alpha_{0_i} + \alpha_{1i} * financial_{i,t} + \alpha_{2_i} * fianancial_{i,t}^{\ 2} + \varepsilon_{i,t},\ \alpha_{1i} \geq 0, \alpha_{2_i} \leq 0 \quad (1)$$

$p_{i,t}$ - represents the price variation of asset *i* at moment *t*

financial – represents the synthetic describer of financial status

α_{0_i} - reflects a “long term” trend induced by the economic and financial situation of the issuers in previous periods

$\varepsilon_{i,t}$ - represents the “short-term” transitory shocks that lead to a price deviation from the given level of “fundamental” variables

3. The last stage refers to the results obtained in the previous step that can be used in generating trading signals based on fundamental analysis. The actual generating technique can be synthesized by the following rule: if the current period t financial status indicator reflects a positive evolution, a buy signal is generated (buy long), reflecting investors' expectations regarding the positive potential of financial assets’ price increase. Correspondingly, if the synthetic describer shows a negative situation, a signal of "early sell" is generated (sell short) reflecting investors' expectations of a downward trend of prices.

To test this rule we shall consider a pre-determined trading horizon of one year. This range reflects the period required for the information on the financial statements of issuers, once arrived on the market, to exert the effects of "structural adjustment portfolios" and putting the prices of financial assets on the appropriate trend. It is to be noted that the speed of adjustment may be different for individual markets depending on a number of factors such as the degree of information asymmetry, the severity of "moral hazard", market liquidity, trading mechanisms efficiency, data processing algorithms and their effectiveness, investors’ taxonomy and their 'risk profile', etc. The assessment of the results is linked to the efficiency of the financial resources used in the portfolio construction:

$$\eta_{usedresources} = \frac{\prod_{assets}}{Expenses_{assets}} \quad (2)$$

$\eta_{usedresources}$ - efficiency of used financial resources

$\prod_{assets}$ - result of traded assets

$Expenses_{assets}$ - expenses of traded assets

The simulation in tables 6-16 is performed considering pre-determined holding horizon of the financial asset of one year. It does not take into account brokerage commissions and other possible costs of owning and trading the asset. This testing method allows displaying the accuracy of signals generated without considering the potential impact on trading results which can be associated with the use of different methods of asset allocation in the portfolio,

specifically it considers equal weighted allocation method. The aim is to highlight the ability of fundamental analysis to identify conditions of entry / exit to / from the market.

4. International data

Next we consider a data set consisting of financial information and, respectively, the variation of share prices of issuers from the American and European market. The issuers considered (tables 3-5) are part of indexes of those markets. Hence, on the American market we considered the DJIA index (Dow Jones Industrial Average) and on the European market we selected two indices: a) ESX (Euro Stoxx) to highlight developed capital markets (Western Europe); b) WIG20 to highlight emerging capital markets (Eastern Europe). All this information has been retrieved and processed from Teletrader Professional platform from Teletrader (2014). Both the financial statements and variations in the share prices of issuing companies have a yearly frequency and a period of four years (01.01.2010-31.12.2013) was considered. Based on financial statements a series of financial describers were computed (long term liability ratio, debt ratio, ROA, ROE, EPS, dividend / share, financial leverage), which may have an influence on the evolution of the share prices. The share prices variations refer to the change in the closing prices. All such information is provided in tables 6-16.

Analysis is performed on a total of 59 companies that are split for each zone according to the sectors from which they belong: a) "consumer goods"; b) "goods, industry, energy"; c) "financial"; d) "telecommunications". Based on all the information for each issuer a series of signals were identified, specifically buying shares depending on the evolution of the financial status synthetic describer (financial).

In order to assess the relevance of such a synthetic describer, we proceed with preliminary testing of the impact on the financial asset price dynamics in a Generalized Estimating Equation (GEE) model. It is used to estimate parameters of GLM model when the structure of correlations is not known exactly. The specific advantage of this type of models lies in their focus on average data behaviour ("Population-averaged" effects). GEE models are usually used together with estimator such as *Huber - White* of standard errors ("Robust standard errors" or “sandwich” variance estimators). GEE model belong to a class of semi-parametric regression techniques and are alternatives to models based on "likelihood function", models which show a more pronounced sensitivity to the specific structure of the variance. The results of this type of differentiated models on the markets are reported in table 2.

Table 2 GEE model - results

	DJI	EUR	WIG
Financial	0,007 (0,008)	0,011 (0,018)	0,068*** (0,019)
Financial^2	-0,010*** (0,004)	-0,013* (0,007)	-0,007** (0,003)
Constant	0,157*** (0,019)	0,154** (0,061)	0,029 (0,044)
Wald χ^2	6,88 (p=0,032)	9,28 (p=0,010)	15,96 (p=0,000)

***, **, * - significance level 1%, 5%, 10%
Note: GEE model type „population-averaged"; *Link*: Gaussian; Correlation: stationary (type 1); In () robust standard errors.
Source: own construction

One can observe that for all the results obtained, the mentioned effect of "inverted U curve" can be identified, the non-linear component being statistically significant for a significance level of 5% (10%).

5. Results and comments

Based on the results from table 2, we further generate trading signals. Results are reported in tables 6-16. From the comparative analysis of sectors taken into consideration on the US market, it can be seen that good performance was recorded by the "consumer goods" with a return on used resources of 6.24% and the "telecommunications" with a return on used resources of 4.74%. Although the "goods, industry, energy" sector recorded a positive trading result, the profitability of used resources is relatively low (0.81%). The only sector that recorded losses was the "financial". It is worth noting that within the sector with a high percentage of BL signals, the result was the highest and return on used resources was the best. SS signals have a negative influence within each sector under consideration.

Similar to the US market, on Western Europe market, very good performance was recorded by the "consumer goods" sector with a return on used resources of 18.67%, followed by the "telecommunications" sector with a return on used resources consumed by of 7.72% and the "goods, industry, energy" sector with a return on used resources of 6.64%. The only sector that recorded losses was the "financial". As in the US market, within the sector with only BL signals or a high percentage of them, the result per sector was the highest and profitability of used resources was the best.

In Eastern Europe markets, represented by the capital market in Poland, it can be seen

that the best performance was recorded by the "financial" sector with a return of 18.24% on used resources. Although the "telecommunications" sector records a positive trading result, the profitability of used resources is relatively low (0.20%). The only sector that recorded losses was the "goods, industry, energy". It is noted that positive results were generated by both BL and SS signals. It can be seen that using fundamental analysis on developed markets, "sell short" signals generated especially losses compared to emerging markets, represented by the capital market in Poland, where for both "buy long" and "sell short " signals, mixed results are obtained.

Considering the equal weighted allocation, we may state that an investor in the US market would record average results compared to market opportunities in Europe, namely Poland. On the European market well above average results are reported for the "consumer goods" sector and well above average results in Poland are reported for the "financial" sector. It is interesting to note that on an emerging market the best performance are registered in the "financial" sector while on developed markets trading based on fundamental analysis in this sector generates only losses.

The results provide empirical results on the relevance of using fundamental analysis as a methodology for determining the conditions of entry / exit to / from the market for both mature and emerging financial markets. According to these results it can be noted that there is an asymmetry between the efficiency of "buy long" and "sell short" trading signals.

The developed methodology allows synthesizing various describers of financial status of issuers within a global indicator, testing the existing connection between it and the variation of prices and also actual generation of trading signals.

The proposed methodology was applied on a set of 59 companies from the US, Western Europe and Eastern Europe markets. The generated results allowed estimation of efficiency of financial resources allocated in the construction of a managed portfolio, under a predetermined temporary horizon. These results are different within sectors, depending on the specifics of activities undertaken by issuers (the nature and duration of production cycle, the sector sensitivity to various types of endogenous and exogenous shocks, the level of technological development, the degree of integration of the sector within real and financial international flows, etc.).

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Appendix

Table 3 Companies from DJI structure

Symbol	US - Companies	Sector
Sector - consumer goods		
1	3M Company	consumer goods
10	Coca-Cola Company	consumer goods
15	Home Depot, Inc.	consumer goods
18	Johnson & Johnson	consumer goods
20	McDonald's Corporation	consumer goods
24	Procter & Gamble Co.	consumer goods
29	Wal-Mart Stores, Inc.	consumer goods
30	Walt Disney Company	consumer goods
Sector – goods, industry, energy		
2	Alcoa Inc.	goods
6	Boeing Company	industry
7	Caterpillar, Inc.	industry
8	Chevron Corporation	energy
11	Du Pont (E.I.) de Nemours & Co	goods
12	Exxon Mobil Corporation	energy
13	General Electric Company	industry
26	United Technologies Corporation	industry
Sector – financial		
3	American Express Company	financial
5	Bank of America Corporation	financial
19	JPMorgan Chase & Co.	financial
21	Merck & Co., Inc	financial
23	Pfizer, Inc.	financial
25	The Travelers Companies, Inc.	financial
27	United Group Incorporated	financial
Sector – telecommunications		
4	AT&T Inc	telecommunications
9	Cisco Systems, Inc.	telecommunications
14	Hewlett-Packard Company	telecommunications
16	Intel Corporation	telecommunications
17	Int. Business Machines Corp.	telecommunications
22	Microsoft Corporation	telecommunications
28	Verizon Communications Inc.	telecommunications

Source: own construction

Table 4 Companies from Euro Stoxx structure

Symbol	Western Europe companies	Sector
Sector - consumer goods		
3	Bay. Motoren Werke AG ST	consumer goods
5	Daimler AG	consumer goods
16	Volkswagen AG	consumer goods
Sector – goods, industry, energy		
2	Basf Se Na O.N	goods
4	Bayer AG	goods
8	Eon	energy
9	Europ.Aeron.Def	industry
11	Rwe AG	energy
13	Siemens AG	industry
15	Total S.A.	energy
Sector – financial		
1	Allianz Se Vna O.N.	financial
6	Deutsche Bank AG	financial
10	Muench.Rueckvers.	financial
Sector – telecommunications		
7	Deutsche Telekom AG	telecommunications
12	Sap AG	telecommunications
14	Telefonica	telecommunications

Source: own construction

Table 5 Companies from WIG structure

Simbol	Polish companies	Sector
Sector – goods, industry, energy		
2	BORYSZEW	industry
6	KGHM	industry
7	LOTOS	energy
9	PGNIG	energy
10	PKNORLEN	energy
Sector – financial		
3	BRE	financial
4	GTC	financial
5	HANDLOWY	financial
8	PEKAO	financial
11	PKOBP	financial
Sector – telecommunications		
1	ASSECOPOL	telecommunications
12	TPSA	telecommunications
13	TVN	telecommunications

Source: own construction

Table 6 Signals/ Results of traded assets from US - sector consumer goods

DJI - consumer goods							
Company	**Year**	**Share Price (USD)**	***Financial***	**Signal**	**Result/ transaction (USD)**	**Result/ traded asset (USD)**	**Expenses (USD)**
1	2010	86.3	1.6659				
1	2011	81.73	1.7225	BL	-4.57		86.3
1	2012	92.85	1.8500	BL	11.12		81.73
1	2013	140.25	2.0897	BL	47.4	53.95	92.85
10	2010	32.88	0.8844				
10	2011	34.99	-0.0123	BL	2.11		32.88
10	2012	36.25	-0.0066	SS	-1.26		36.25
10	2013	41.31	-0.0699	SS	-5.06	-4.21	41.31
15	2010	35.06	-0.4897				
15	2011	42.04	-0.1529	SS	-6.98		42.04
15	2012	61.85	0.1417	SS	-19.81		61.85
15	2013	82.34	0.4300	BL	20.49	-6.3	61.85
18	2010	61.85	1.4372				
18	2011	65.58	0.6947	BL	3.73		61.85
18	2012	70.1	0.9148	BL	4.52		65.58
18	2013	91.59	1.3975	BL	21.49	29.74	70.1
20	2010	76.76	2.0400				
20	2011	100.33	2.4292	BL	23.57		76.76
20	2012	88.21	2.4613	BL	-12.12		100.33
20	2013	97.03	2.5987	BL	8.82	20.27	88.21
24	2010	64.33	0.7884				
24	2011	66.71	0.6687	BL	2.38		64.33
24	2012	67.89	0.6442	BL	1.18		66.71
24	2013	81.41	0.7404	BL	13.52	17.08	67.89
29	2010	53.93	0.3226				
29	2011	59.76	0.3089	BL	5.83		53.93
29	2012	68.23	0.4552	BL	8.47		59.76
29	2013	78.69	0.5165	BL	10.46	24.76	68.23
30	2010	37.51	-0.7580				
30	2011	37.5	-0.5764	SS	0.01		37.5
30	2012	49.79	-0.2499	SS	-12.29		49.79
30	2013	76.4	-0.0642	SS	-26.61	-38.89	76.4
General information			**Total**			**96.4**	**1544.43**
			Return of used resources			**6.24%**	
			Number of BL signals			**17**	
			Number of SS signals			**7**	

Source: own calculation

Table 7 Signals/ Results of traded assets from US – sector goods, industry, energy

DJI - goods, industry, energy							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
2	2010	15.39	-2.1816				
2	2011	8.65	-2.0168	SS	6.74		8.65
2	2012	8.68	-2.2796	SS	-0.03		8.68
2	2013	10.63	-3.7785	SS	-1.95	4.76	10.63
6	2010	65.26	-0.1181				
6	2011	73.35	0.0410	SS	-8.09		73.35
6	2012	75.36	-0.4002	BL	2.01		73.35
6	2013	136.49	0.0087	SS	-61.13	-67.21	136.49
7	2010	93.66	-0.4415				
7	2011	90.6	0.4504	SS	3.06		90.6
7	2012	89.61	0.7876	BL	-0.99		90.6
7	2013	90.81	0.2528	BL	1.2	3.27	89.61
8	2010	91.25	2.1363				
8	2011	106.4	3.1698	BL	15.15		91.25
8	2012	108.14	3.1828	BL	1.74		106.4
8	2013	124.91	2.7492	BL	16.77	33.66	108.14
11	2010	49.88	-0.0165				
11	2011	45.78	-0.0357	SS	4.1		45.78
11	2012	44.98	-0.4236	SS	0.8		44.98
11	2013	64.97	0.6704	SS	-19.99	-15.09	64.97
12	2010	73.12	0.9074				
12	2011	84.76	1.5609	BL	11.64		73.12
12	2012	86.55	2.0845	BL	1.79		84.76
12	2013	101.2	2.0173	BL	14.65	28.08	86.55
13	2010	18.29	-2.0216				
13	2011	17.91	-1.8533	SS	0.38		17.91
13	2012	20.99	-1.7319	SS	-3.08		20.99
13	2013	28.03	-1.6262	SS	-7.04	-9.74	28.03
26	2010	78.72	0.3013				
26	2011	73.09	0.5627	BL	-5.63		78.72
26	2012	82.01	0.2979	BL	8.92		73.09
26	2013	113.8	0.6337	BL	31.79	35.08	82.01
General information			**Total**			**12.81**	**1588.66**
			Return of used resources			**0.81%**	
			Number of BL signals			**12**	
			Number of SS signals			**12**	

Source: own calculation

Table 8 Signals/ Results of traded assets from US – sector financial

DJI - financial							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
3	2010	42.92	-1.4425				
3	2011	47.17	-1.2368	SS	-4.25		47.17
3	2012	57.48	-1.3001	SS	-10.31		57.48
3	2013	90.73	-0.9826	SS	-33.25	-47.81	90.73
5	2010	13.34	-3.3397				
5	2011	5.56	-3.2051	SS	7.78		5.56
5	2012	11.61	-3.1793	SS	-6.05		11.61
5	2013	15.57	-2.9716	SS	-3.96	-2.23	15.57
19	2010	42.42	-2.5188				
19	2011	33.25	-2.0527	SS	9.17		33.25
19	2012	43.97	-1.7890	SS	-10.72		43.97
19	2013	58.48	-1.8260	SS	-14.51	-16.06	58.48
21	2010	36.04	-1.1190				
21	2011	37.7	-0.1687	SS	-1.66		37.7
21	2012	40.94	-0.1368	SS	-3.24		40.94
21	2013	50.05	-0.4156	SS	-9.11	-14.01	50.05
23	2010	17.51	-1.0416				
23	2011	21.64	-0.8519	SS	-4.13		21.64
23	2012	25.08	-0.3831	SS	-3.44		25.08
23	2013	30.63	0.5529	SS	-5.55	-13.12	30.63
25	2010	55.71	-0.5724				
25	2011	59.17	-1.2631	SS	-3.46		59.17
25	2012	71.82	-0.5464	SS	-12.65		71.82
25	2013	90.54	0.2497	SS	-18.72	-34.83	90.54
27	2010	36.11	-0.4609				
27	2011	50.68	-0.1943	SS	-14.57		50.68
27	2012	54.24	-0.1698	SS	-3.56		54.24
27	2013	75.3	0.0262	SS	-21.06	-39.19	75.3
General information			**Total**			**-167.25**	**971.61**
			Return of used resources			**-17.21%**	
			Number of BL signals			**0**	
			Number of SS signals			**21**	

Source: own calculation

Table 9 Signals/ Results of traded assets from US – sector telecommunications

DJI - telecommunications							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
4	2010	29.38	0.1947				
4	2011	30.24	-1.0604	BL	0.86		29.38
4	2012	33.71	-0.8688	SS	-3.47		33.71
4	2013	35.16	0.0366	SS	-1.45	-4.06	35.16
9	2010	20.23	-0.4011				
9	2011	18.08	-0.7292	SS	2.15		18.08
9	2012	19.64	-0.4054	SS	-1.56		19.64
9	2013	22.43	-0.0586	SS	-2.79	-2.2	22.43
14	2010	41.1	-0.7401				
14	2011	25.76	-0.9885	SS	15.34		25.76
14	2012	14.25	-5.6046	SS	11.51		14.25
14	2013	27.98	-1.1933	SS	-13.73	13.12	27.98
16	2010	21.03	1.1645				
16	2011	24.25	1.2289	BL	3.22		21.03
16	2012	20.62	0.6161	BL	-3.63		24.25
16	2013	25.955	0.2846	BL	5.335	4.925	20.62
17	2010	146.76	2.8229				
17	2011	183.88	3.4732	BL	37.12		146.76
17	2012	191.55	4.0068	BL	7.67		183.88
17	2013	187.57	4.0428	BL	-3.98	40.81	191.55
22	2010	27.91	1.3096				
22	2011	25.96	1.4587	BL	-1.95		27.91
22	2012	26.7097	0.4746	BL	0.7497		25.96
22	2013	37.41	0.8087	BL	10.7003	9.5	26.7097
28	2010	35.78	-1.5228				
28	2011	40.12	-1.5807	SS	-4.34		40.12
28	2012	43.27	-1.8132	SS	-3.15		43.27
28	2013	49.14	-0.3289	SS	-5.87	-13.36	49.14
General information			**Total**			**48.735**	**1027.5897**
			Return of used resources			**4.74%**	
			Number of BL signals			**10**	
			Number of SS signals			**11**	

Source: own calculation

Table 10 Signals/ Results of traded assets from Western Europe – sector consumer goods

EUR - consumer goods							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
3	2010	58.71	0.4673				
3	2011	51.54	0.7380	BL	-7.17		58.71
3	2012	73.09	0.6990	BL	21.55		51.54
3	2013	85.22	0.7229	BL	12.13	26.51	73.09
5	2010	50.92	0.3432				
5	2011	33.768	0.6043	BL	-17.152		50.92
5	2012	41.424	0.6784	BL	7.656		33.768
5	2013	62.9	0.7254	BL	21.476	11.98	41.424
16	2010	121.81	0.2666				
16	2011	115.15	1.1953	BL	-6.66		121.81
16	2012	172.26	1.6912	BL	57.11		115.15
16	2013	196.9	0.1358	BL	24.64	75.09	172.26
General information			**Total**			**113.58**	**608.422**
			Return of used resources			**18.67%**	
			Number of BL signals			**9**	
			Number of SS signals			**0**	

Source: own calculation

Table 11 Signals/ Results of traded assets from Western Europe – sector goods, industry, energy

EUR - goods, industry, energy							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
2	2010	60.01	1.7588				
2	2011	53.63	2.3219	BL	-6.38		60.01
2	2012	71.3	1.6096	BL	17.67		53.63
2	2013	77.49	1.8273	BL	6.19	17.48	71.3
4	2010	55.05	0.4673				
4	2011	49.2	0.7380	BL	-5.85		55.05
4	2012	71.86	0.6990	BL	22.66		49.2
4	2013	101.95	0.7229	BL	30.09	46.9	71.86
8	2010	22.865	0.4693				
8	2011	16.53	-1.4750	BL	-6.335		22.865
8	2012	14.087	-0.4126	SS	2.443		14.087
8	2013	13.415	-0.3924	SS	0.672	-3.22	13.415
9	2010	17.785	-1.7404				
9	2011	24.115	-1.4821	SS	-6.33		24.115
9	2012	29.425	-1.3593	SS	-5.31		29.425
9	2013	55.81	-1.2152	SS	-26.385	-38.025	55.81
11	2010	50.01	-0.1878				
11	2011	26.923	-0.7417	SS	23.087		26.923
11	2012	31.2	-0.9975	SS	-4.277		31.2
11	2013	26.605	-3.2709	SS	4.595	23.405	26.605
13	2010	93.17	0.3466				
13	2011	73.83	0.9186	BL	-19.34		93.17
13	2012	82.06	0.4124	BL	8.23		73.83
13	2013	99.29	0.4969	BL	17.23	6.12	82.06
15	2010	40.145	1.6933				
15	2011	39.468	1.6814	BL	-0.677		40.145
15	2012	39.08	1.3607	BL	-0.388		39.468
15	2013	44.53	1.0597	BL	5.45	4.385	39.08
General information			**Total**			**57.045**	**859.608**
			Return of used resources			**6.64%**	
			Number of BL signals			**13**	
			Number of SS signals			**8**	

Source: own calculation

Table 12 Signals/ Results of traded assets from Western Europe – sector financial

EUR - financial							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
1	2010	88.96	-1.9622				
1	2011	73.43	-2.3177	SS	15.53		73.43
1	2012	104.58	-2.0780	SS	-31.15		104.58
1	2013	130.35	-2.0257	SS	-25.77	-41.39	130.35
6	2010	39.06	-3.5758				
6	2011	29.319	-3.5420	SS	9.741		29.319
6	2012	33.012	-3.7069	SS	-3.693		33.012
6	2013	36.675	-3.2158	SS	-3.663	2.385	36.675
10	2010	113.39	-1.8702				
10	2011	94.59	-2.4078	SS	18.8		94.59
10	2012	136.08	-1.7154	SS	-41.49		136.08
10	2013	160.15	-1.7109	SS	-24.07	-46.76	160.15
General information			**Total**			**-85.765**	**620.176**
			Return of used resources			**-13.83%**	
			Number of BL signals			**0**	
			Number of SS signals			**9**	

Source: own calculation

Table 13 Signals/ Results of traded assets from Western Europe – sector telecommunication

EUR - telecommunications							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
7	2010	9.623	0.2328				
7	2011	8.85	-0.0398	BL	-0.773		9.623
7	2012	8.603	-1.8227	SS	0.247		8.603
7	2013	12.43	-0.2282	SS	-3.827	-4.353	12.43
12	2010	37.92	2.5867				
12	2011	40.92	3.8076	BL	3		37.92
12	2012	60.79	3.0022	BL	19.87		40.92
12	2013	62.31	3.5109	BL	1.52	24.39	60.79
14	2010	17.02	2.3962				
14	2011	13.28	1.0930	BL	-3.74		17.02
14	2012	10.115	0.6730	BL	-3.165		13.28
14	2013	11.835	1.3402	BL	1.72	-5.185	10.115
General information			**Total**			**14.852**	**192.475**
			Return of used resources			**7.72%**	
			Number of BL signals			**7**	
			Number of SS signals			**2**	

Source: own calculation

Table 14 Signals/ Results of traded assets from Eastern Europe – sector goods, industry, energy

WIG - goods, industry, energy							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
2	2010	20	-0.8805				
2	2011	6.3	0.1202	SS	13.7		6.3
2	2012	6.2	-0.6186	BL	-0.1		6.3
2	2013	5	-0.8196	SS	1.2	14.8	5
6	2010	173	4.3296				
6	2011	110.6	8.6020	BL	-62.4		173
6	2012	190	2.9228	BL	79.4		110.6
6	2013	118	1.4362	BL	-72	-55	190
7	2010	36.35	-0.4750				
7	2011	23.3	-0.5495	SS	13.05		23.3
7	2012	41.2	-0.2563	SS	-17.9		41.2
7	2013	35.45	-1.1882	SS	5.75	0.9	35.45
9	2010	3.57	0.1795				
9	2011	4.08	-0.2010	BL	0.51		3.57
9	2012	5.21	-0.3759	SS	-1.13		5.21
9	2013	5.15	-0.4628	SS	0.06	-0.56	5.15
10	2010	45.8	-0.1690				
10	2011	33.9	-0.3746	SS	11.9		33.9
10	2012	49.5	-0.1251	SS	-15.6		49.5
10	2013	41	-0.8438	SS	8.5	4.8	41
General information			**Total**			**-35.06**	**716.88**
			Return of used resources			**-4.89%**	
			Number of BL signals			**5**	
			Number of SS signals			**10**	

Source: own calculation

Table 15 Signals/ Results of traded assets from Eastern Europe – sector financial

WIG - financial							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
3	2010	304	0.3632				
3	2011	246	0.9555	BL	-58		304
3	2012	326	0.8964	BL	80		246
3	2013	500	1.7892	BL	174	196	326
4	2010	24.5	-1.4422				
4	2011	9.3	-3.7072	SS	15.2		9.3
4	2012	9.9	-2.3426	SS	-0.6		9.9
4	2013	7.45	-3.0858	SS	2.45	17.05	7.45
5	2010	93.5	0.4870				
5	2011	67.9	0.1862	BL	-25.6		93.5
5	2012	98.3	0.6309	BL	30.4		67.9
5	2013	105	0.7621	BL	6.7	11.5	98.3
8	2010	179	0.7718				
8	2011	141.2	0.7316	BL	-37.8		179

WIG - financial							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
8	2012	167.5	1.0050	BL	26.3		141.2
8	2013	179.5	1.0876	BL	12	0.5	167.5
11	2010	43.35	0.0562				
11	2011	32.12	0.0859	BL	-11.23		43.35
11	2012	36.9	0.0480	BL	4.78		32.12
11	2013	39.42	-0.1724	BL	2.52	-3.93	36.9
General information			**Total**			**221.12**	**1212.42**
			Return of used resources			**18.24%**	
			Number of BL signals			**12**	
			Number of SS signals			**3**	

Source: own calculation

Table 16 Signals/ Results of traded assets from Eastern Europe – sector telecommunications

WIG - telecommunications							
Company	**Year**	**Share Price (EUR)**	***Financial***	**Signal**	**Result/ transaction (EUR)**	**Result/ traded asset (EUR)**	**Expenses (EUR)**
1	2010	53	0.1419				
1	2011	48.5	0.0425	BL	-4.5		53
1	2012	45.35	-0.0026	BL	-3.15		48.5
1	2013	45.97	0.0399	SS	-0.62	-8.27	45.97
12	2010	16.35	-0.8927				
12	2011	17.23	0.0575	SS	-0.88		17.23
12	2012	12.23	-0.4703	BL	-5		17.23
12	2013	9.8	-0.6047	SS	2.43	-3.45	9.8
13	2010	17.1	-1.5338				
13	2011	10.3	-3.3484	SS	6.8		10.3
13	2012	9.92	0.0555	SS	0.38		9.92
13	2013	14.7	-2.8415	BL	4.78	11.96	9.92
General information			**Total**			**0.24**	**120.37**
			Return of used resources			**0.20%**	
			Number of BL signals			**4**	
			Number of SS signals			**5**	

Source: own calculation

Hetesi E. – Vas Zs. (eds) 2015: *New Ideas in a Changing World of Business Management and Marketing*. University of Szeged, Doctoral School in Economics, Szeged, pp. 164-172.

12. Surányi György as "the" Manager of the Hungarian Monetary Policy between 1989 and 2001

Ádám Kerényi

Decision makers, analysts and economists seek to learn from the best experts of monetary policy and central banking, in order that they can do better next time, or in order to avoid financial crisis One man's decisions are always a matter of controversy, only time can decide whether he was right or wrong. In my study I focus on the carrier of Surányi György, who is a professor of Economics in Corvinus Budapest University, he used to be the governor of the Hungarian National Bank. According to several experts Surányi György had a successful experience in policymaking during 1990-1991 and 1995-2001. Surányi was elected to the best central banker of the CEE region several times.

In my case study I try to show one debate with George Soros and a management challenge from his carrier. The famous austerity and adjustment program started a stabilization in 1995 was an extremely painful process, which was followed by a heterodox economic policy. This was not based exclusively on budgetary corrections, and even if such corrections were made, they were implemented in a kind of structure that exercised a positive influence on the business sector, the economy and on investments. This is why he succeeded in saving jobs. But the real wages fell by 11 percent in the first year, which put extraordinary burdens on many people, but this was still more tolerable than seeing tens of thousands of workers lose their jobs and join the ranks of the unemployed. This program was not supported by the International Monetary Fund, but was supported by the international financial markets and the business community. After only one year the introduction of the stabilization program the Monetary Fund admitted that the program was working – and fully in line with the previous hopes of the Governor's.

Keywords: central banking, monetary policy

1. Introduction

Two very interesting books have been published recently (Lengyel − Surányi 2013, Sebestény 2014) which are very useful in examining the Hungarian economic policy history of the last 25 years in the context of a central banker carrier. A central banker rarely teaches in universities, or a university professor almost never becomes a decision maker of the monetary policy. The two professions require different combination of knowledge. But examples occur as Olivier Blanchard, who is at the same time the chief economist of the IMF and an academic economist.

Monetary policymakers have certain objectives —such as low inflation, output stability, and perhaps external balance—and certain instruments to be deployed in meeting their responsibilities, such as bank reserves or short-term interest rates. "*Unless it has only a single*

goal, the central bank is forced to strike a balance among competing objectives, that is, to face up to various trade-offs" (Blinder 1999, p. 4) "*Here art would be well advised to imitate life a bit more*" (Blinder 1999, p. 29).

Being the governor of the Hungarian National Bank (HNB) is a very important (if not the most important) position of the nation's economy management, therefore I think this might be an issue in a management work shop.

2. Management rank

Surányi played a key role in transforming the National Bank of Hungary into a truly independent central bank, in the transition to a modern market-oriented economy. "*This process began with small steps, such as his decision to abstain from participating in the government's weekly cabinet meetings, and culminated with his refusal to bend and resign from his post under government pressure. Also, he was unflagging in his efforts to develop the bank's analytical capacity by transforming it into an internationally recognized center of applied macroeconomic research. These efforts were accompanied by initiatives toward a collegial decision-making structure, in the form of a consultative board comprised of distinguished economists*" (Kopits 2014, p. 104). Surányi was well aware about being in a higher position more important to work with critical minded colleagues who might control him instead of being circled with "yes, boss!"-type employees. Surányi György prestige inside and outside Hungary, received several prizes due to his modest communication, his concrete macroeconomic achievements (Kornai 2014.) In Europe (Figure 1.). "*Luis Ángel Rojo, the former governor of the Bank of Spain, tops the ranking, with five A grades. Hanna Gronkiewicz-Waltz, chairman of the National Bank of Poland between 1992 and 2000, Svein Gjedrem, Norway's central bank governor for two terms between 1999 and 2010 and György Surányi, president of the Hungarian National Bank twice between 1991 and 2001, all vie for second place with four A grades each*" (Tully 2012, p. 1).

In the performance evaluation of central bank heads published each year by the financial magazine Global Finance before the autumn general meeting of the IMF and the World Bank, this year the National Bank of Hungary president received an "A" rating. The magazine said that the central bank, under Surányi's management, has shown determination in reducing inflation and has worked on the problem of the current account deficit. "Surányi is the type of banker who is willing to sacrifice growth to keep the current account deficit under control," Global Finance says.

Figure 1 Central bankers rank

THE AMERICAS	COUNTRY	Number Of "A" Grades
Alan Greenspan	US	5
Gordon Thiessen	Canada	3
Vittorio Corbo	Chile	2
Miguel Mancera Aguayo	Mexico	1
Gustavo Franco	Brazil	1
Arminio Fraga Neto	Brazil	1
Guillermo Ortiz Martínez	Mexico	1
Carlos Massad	Chile	1
EUROPE	**COUNTRY**	**Number Of "A" Grades**
Luis Ángel Rojo	Spain	5
Svein Gjedrem	Norway	4
Hanna Gronkiewicz-Waltz	Poland	4
György Surányi	Hungary	4
Jean-Claude Trichet	France	3
Urban Bäckström	Sweden	3
Edward George	UK	3
Lars Heikensten	Sweden	2
Antonio Fazio	Italy	2
Gazi Erçel	Turkey	2
Leszek Balcerowicz	Poland	1
Stefan Ingves *	Sweden	1
Zdeněk Tůma	Czech Republic	1
Durmus Yilmaz	Turkey	1
Tatiana Paramonova	Russia	1
Willem Frederik Duisenberg	Netherlands	1
Viktor Yushchenko	Ukraine	1
Bodil Nyboe Andersen	Denmark	1
ASIA-PACIFIC	**COUNTRY**	**Number Of "A" Grades**
Zeti Akhtar Aziz *	Malaysia	9
Perng Fai-Nan *	Taiwan	8
Ian Macfarlane	Australia	7
Amando Tetangco Jr *	Philippines	3
Glenn Stevens *	Australia	3
Rafael Buenaventura	Philippines	2
Burhanuddin Abdullah	Indonesia	2
Bimal Jalan	India	1
Park Seung	South Korea	1
Pridiyathorn Devakula	Thailand	1
Yaga Venugopal Reddy	India	1
Heng Swee Keat	Singapore	1
Lee Seongtae	South Korea	1
Yasushi Mieno	Japan	1
Donald Brash	New Zealand	1
Lee Hsien Loong	Singapore	1
MIDDLE EAST/AFRICA	**COUNTRY**	**Number Of "A" Grades**
Tito Mboweni	South Africa	5
Stanley Fischer *	Israel	4
Riad Salameh *	Lebanon	1
Jacob Frenkel	Israel	1

* Current governor

Source: Tully (2012, p. 2-3)

The evaluation points out that during Surányi's tenure as bank president, inflation has fallen in Hungary from 28.3% in 1995 to under 10% this year (Figure 2.). The former World Bank official and economist has very effectively applied interest rates as a means of controlling exchange rates, the magazine says. In addition, Surányi's "A" rating is justified by the fact that the Hungarian forint is linked to other currencies in a clearly transparent fashion, and that the NBH is determined to modernize, while it is one of the top promoters of banking supervision in Eastern Europe. Global Finance stressed that Surányi was clearly not appointed for political reasons. In summary according to Global Finance Hungary has been successful in

keeping the current account deficit under control and that the capital market and bank sector are perhaps the best in the region.

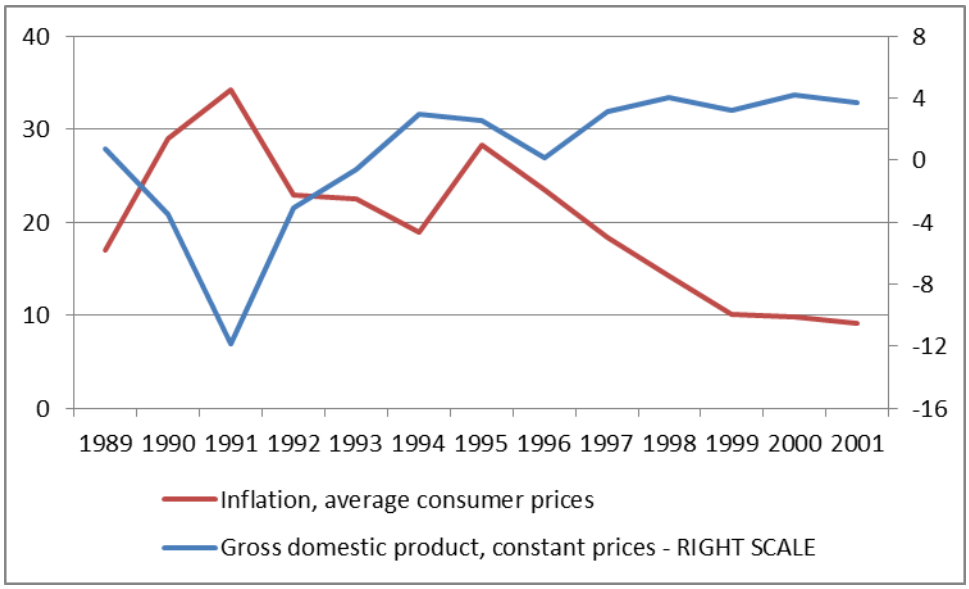
3. How did Surányi manage to convince Soros in 1989?

In the regime change the debt was a huge burden of the Hungarian state. The NBH represented that argument when a country asks for a loan it needs to repay it. Although Surányi joined to the NBH only in 1991 he shared and supported this attitude. According to Surányi theoretically a market economy is coordinated by the money. A new market economy as Hungary cannot start its history by insolvency, and stating that it won't pay back its debts. Surányi also had practical backgrounds for his refusal of not paying the inherited debts: in 1989 the Hungarian there was a 1-1.5 million USD deficit in current account balance which was the 8-9 % of the GDP, compared internationally a high level. If a country loses its solvency, and has such a big deficit it means that after reporting its insolvency it can pay only in cash for any kind of goods or services. This leads a prompt shock up to the GDP's 8-9%, which in 2-3 years horizon will govern a 15-20 contraction of the economy. According to Surányi this was a gamble with the fire, the stake were jobs of 100-1000 thousands people and their ordinary lives. And the political stake was high also in the time of a regime change. Surányi had a strong debate with many economists; including George Soros thought that Hungary would not endure the maintenance of the inherited debt. George Soros organized a debate about this question in his apartment in London. In this event Soros after his argumentation also mentioned that the momentum of a regime change is a good reason for asking for release the debt. He referred for the Polish example as a precedent, so the debate between Soros and Surányi started with that point: it was a rational decision to throw the towel and let's see the flood.

According to Surányi although it seemed to be parallel, in the reality the two cases were completely different for many reasons: in Poland there was announced a state of emergency already in 1981, and stopped paying the debts, the creditors were governments in the Polish case, and negotiating with the governments' Parisian Club is much more easier, thirdly the Western world has a bad conscience regarding their role in the history of Poland up to 1939 and 1945, they reminded that they let Poland to the German hands. Then Surányi said that that interest rates would be higher if Hungary asked for the changing the timing of the redemption of its debts. The release of the debts requires a long period of negotiations, and during that period Hungary supposed to maintain its current account balance, which could happen only

by the misery of the people. By the end of the debate Surányi managed to convince Soros and his experts, and Hungary stayed to be a responsible debtor, which was paying back its debts. Antall who became the prime minister in 1990 also stood for the repayment of the debts. When Surányi became the president of the NBH in 1990 the foreign exchange reserve was 500 million USD, which was equal the import of one month, so the reserve was inefficient, the country was in the edge of the cliff. By the end of 1991 the reserves increased to 2500 million USD (Lengyel − Surányi, 2013.).

Figure 2 The inflation and the GDP % change in Hungary between 1989 and 2001



Source: IMF (2015)

4. Avoid payment and debt crisis by the "Bokros-package" in 1995

The package of stabilization measures were announced twenty years ago on March 12, 1995, which consisted of the following three major elements (Kornai 1995):

1. An immediate, radical devaluation of the Hungarian forint, also a further course of steady devaluation was announced. In addition, a significant import surcharge (supplementary customs duty) was introduced.
2. A substantial fall in budgetary spending was prescribed. This extended to numerous estimates, including several item of welfare spending. The alteration would cut the budget deficit to a substantial extent in 1995, and still more in the following year.
3. The government curbed the rise in nominal wages and earnings. Strict limits were accordingly set for personal incomes paid by the budget-financed sector and for wage

rises in enterprises in majority state ownership. The program assumes that those conducts by the state sector would curb the rise in wages in the private sector as well.

"*The various novelties, which appeared between 1995-2001 in the field of the Hungarian monetary policy were implemented by Surányi, so he in the Schumpeterian term might call an innovator. Only with a reasonable argument occasionally the innovative thinking comes together with unexpected measures of the NBH, but the thumb rule is the accountability, the policy of the NBH in words and in acts should be trustworthy, which was represented the 1995-2001 periods*" (Kornai 2014, p. 114).

"*Domestic and foreign experts debated strongly the advantages and disadvantages if various "exchange-rate regimes". The regime which was implemented by Surányi as the governor of the HNB was the "pre-announced crawling peg". This regime had certain advantages, above all that it made the intentions of the policy makers plain and clear. It made a prior commitment to keep the actual exchange rate within a designated band. This tended to take the edge off speculation and forestall the extra imports engendered by devaluation expectations. To this extent, if successfully applied, it would contribute to improving the trade and current-account balances. But such an exchange-rate regime tied the hands of the monetary authorities, reducing their room for manoeuver*" (Kornai 1995, p. 637).

What does Surányi say about the purpose of the elements of the stabilization package? "It remains for me a forever living dilemma, whether the '95 stabilization economic policy mix was good or bad. Regarding the numbers and the ratios of the program our expectations were rational. The public opinion forgave by the beginning of '97, according to different survey polls the people started to believe that the country was getting out from the transformation crisis. The political parties' popularity did not reflect the undoubtedly painful effect of the '95 economic stabilization. The people and the leaders of the governing parties started to realize that the living standards might be improved; the growth might be supported by a way which is not the increase of the state's redistribution ratio, or consuming the following generation's goods. The people started to trust in their own strength on coming out from their poor circumstances. But some parts of the '95 program were erased by the Constitutional Court, and some measures of the program could have been implemented later. If the program was successful without these measures the question arises: were these measures necessary at all? Or by neglecting them some social conflicts could have been saved? Those measures one by one in quantitative sense were very small, so its stress, tension and irritation were inevitable? We can see that the rejection of the Constitutional Court and

the delayed introduction did not jeopardize the operability of the program. Today I would say that less could have been more. By a more profound prepared program with a better communication the achieved results could have been much better. The public could have probably better understood the core purpose of the program: trying to help those, who were really in difficult situation - due not to his own fault -, in spite of all other free riders to whom the program wanted to drive back. A better prepared, and a better communicated package obviously could have been much more effective, nevertheless there is still something because I can not to say that. For me, the dilemma still exists: if the change management program had not been so shocking, concentrated, multi element, logically strict and closed, it would have provoked such a huge effect? Whether almost everyone in the country could have understood that we were at the edge of a cliff, but we could jump through together? By the fact that we could not or delayed implementing all the elements of the program the population's and the actors of the economy attitude changed. While the real wages shrunk by 10%, while the real earnings decreased by 7% the financial saving rate doubled. The people pulled the brakes, changed their way of lives, their costs of living so the saved more from less income than they used to save before from more income. So from one way the reduction of the consumption and from the other way the increase of the savings affected the saving-investment equilibrium in a fruitful way, which contributed to finance the investment with internal resources. The savings of the household were kept in Hungary in spite of changing it to foreign currency which could have been absolutely legal due to the full convertibility of the forint, which was implemented in 1996. This act was an implicit way of their extremely strong trust towards what was happening. This was an informal trust election about the economic policy, and it showed that despite of the much pain, misery, trial, the families believed that the results would come. I do not know without those small measures the social shock effect could have been reached?" (Lengyel − Surányi 2013)

"*Naturally, the process of creating a modern central bank is made up of many components. For example, the organization underwent transformation, while staff numbers were cut by a half, and operating costs by more than 40% in real terms. Practically all activities unrelated to central banking were separated from the NBH, including those related to commercial banking. The central bank played a key role in the creation of the Treasury and the Government Debt Management Agency, as well as in the successful conduct of debt conversion. The fiscal and monetary functions became clearly distinct. The central bank's forint and currency market organizations were standardized, and its risk management and analysis system took on a modern and strictly controlled form. Up-to-date instruments and*

analytical systems were developed for monetary policy. Because of its responsibility for financial stability, the Bank is increasingly examining the whole of the financial system with particular regard to any risks. The settlement and internal information systems have been enhanced to state-of-the-art standards. Thus the NBH has managed to make up for several decades of lost ground. The Bank has become transparent, since its internal and external monitoring systems have undergone radical renewal. New publications, which have been widely accessible on the National Bank's home page via the internet for some time now, provide both specialists and the general public with insight into the National Bank's economic, research and statistical activities, the development of which has been highly praised by independent experts. Even though the decision had been made much earlier, the replacement of coins and banknotes took place partly during this period, and emissions policy has been reviewed. One result of these changes is that the NBH has made essential preparations for Hungary's accession to the EU" (NBH 2000, p. 3).

5. Summary

In the paper I showed different periods of his tenures, when his management skills were needed in order to avoid the economic meltdown in 1990 and in 1995. Surányi was the former governor of the Hungarian National Bank between 1990–1991 and again in 1995-2001. He played a key role in transforming the National Bank of Hungary into a truly independent central bank, in the transition to a modern market-oriented economy.

In his second tenure he managed to restore the balance to the Hungarian economy and getting inflation under control. His efforts merited several international prizes. He was elected as one of the best central bankers. Surányi not only has a reputation between the central bankers community, he also has been following an academic career, as full professor, he can share his knowledge and experience between the central bankers of tomorrow.

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13. Study of the Operational Risk of 3166 Local Governments in Hungary between 2003 and 2012

Loss and Risk Aversion in State-Financial Decisions

Gábor Kozma

In the process of shaping up the theoretical framework, we substituted operational incomes and expenditures into the value function of prospect theory. By this we achieved that the results of economic psychological research concerning loss and risk aversion could also be applied in the analysis of state financial decisions. Discretionary decisions can be placed in distinct reference frameworks on the side of both incomes and expenditures. Decisions made in risky situations can be analysed with both utility axioms and in the conceptual framework of psychological value.

Because of the properties of the operational system of the modern state, we gave preference to the psychological approach of the behavioural economics. By this approach, we determined the theoretical value of the operational risk of discretionary decisions, which we interpreted as inherent risk and, in the course of an empirical study; we made it correspond to the experiential values.

Instead of the macroeconomic level of the state's role-taking and operational risk, we have focussed our research on the system of subnational governments. Wide and detailed secondary data are available about Hungarian local governments, so we carried out our research on a large number of these. Virtually, based on treasury date, we studied 3166 Hungarian local governments in the period between 2003 and 2012.

The result of the statistical analysis is the fact that Hungarian local governments made their financial and budgetary decisions by taking considerable risk concerning their environment. The local governmental level treated their uncertain operational environments in a risk-preferring manner and the established level of risk relatable to discretionary decisions between 2003 and 2012 came to over the theoretical value in the vast number of Hungarian local governments studied.

Keywords: behavioural economics, prospect theory, modern state, operational risk

1. Introduction

The aspects of operational risk management of credit institutions can be applied to the analysis of decisions in state household financial-economic management. Credit institutions are specific, property-based risk-taking communities, where the credit institution, as a private enterprise, apart from its fundamental business activity, takes considerable social responsibility for the availability of certain groups of assets, including undisturbed operation of payment systems or repayment of deposits. Taking this responsibility towards the economic environment

can be so great that the credit enterprise establishes a risk-taking community, which can be extended to those beyond directly affected. In a given case, credit institutions represent too large financial size in the economy to create durable operational trouble in their fundamental activities ("too big to fail"), therefore, it is of social interest to save them (Botos 2014, Rajan 2005, 2010).

A similar situation can be identified at some institutions of the state, especially in the case of natural monopolies and, eventually, in the whole of the operation of the state itself. Further on, we shall apply the above generalization to the state, then to the local level of the operation of the state, which, similarly to credit institutions, does its activity in a special environment concerning operational risk.

Operational risk demonstrates the internal balance of the state's institutional system and the sustainability of its institutions, proportional to the demands of the environment. Operational balance exists between the resources tapped from the environment and the goods produced for the environment. The financial conditions of continuous accommodation to the environment are provided by the state budget, which we interpret as a sensitive subsystem within the framework of the functioning of the state, ensuring and allocating the resources in a balance-creating manner. As our objective is the interpretation of operational risk, further on we study the operational budget of the state[1].

Looking at the sides of income and expenditure together, we can see that considerable social, economic and natural environmental problems may remain unsolved, in case the state covers the operational costs from the regulated tax bases of optimal size and adjusts it to the operational income from the optimal extent of taxes. In this case, the state has used up all the information for making decisions on the side of income, on the side of expenditure, however, it

[1] Calculations for the balance of the budget can be done according to different kinds of international statistical systems. Statistical and state accountancy systems separate the operational, cumulative (capital) and financial transactional parts of state budgets. Processes of cumulative budget related to property items do not directly influence the development of budget. Transactions connected with state property aim to continuously transform (expand, reduce) institutional capacities, which are connected with changes in operational processes with time lag. A process of restructuring an institution appears at the end of a series of operations in altered capacity indices influencing the extent of operational costs, so its effect is built in the state operational budgetary estimates with some delay. In the system of budgetary estimates financing operations play a balancing role, therefore neither logically nor according to typical financial-technical solutions do they belong to the sphere of concepts of budgetary estimate (Vigvári 2008).

has ignored several demands. On the contrary, using up all the information on the expenditure side, in other words, bringing the size of institutional capacity closer to the possible demands, overburdening the possible tax bases or overtaxing the regulated tax bases appear as social and economic drawbacks. Because of the above, we ascribe the positive or negative balances of operational budget to the uncertainty of the operational environment of the state. Looking at any period of time, regulated tax bases or making demands on institutional capacities may fluctuate irrespective of each other.

Therefore, we look at operational risk as something determined from the outside: the system of conditions, to which state decision-makers have to respond, depends on the changes in the state of the environment. Operational budget gives a good approximation to the uncertainty and imbalance of operational environment, the negative value of which expresses the operational risk of the state related to its external environment. The presence of operational risk, its statistic fluctuation and also its unexpected, accidental change mean special operational conditions and constant compulsion of accommodation for the state household. Therefore, the modern state maintains an internal regulatory system, by which it ensures the sustainability of its operation. Regulation-based operation and normativity curbs the influence of external effects affecting the system (Allen − Tommasi 2001, Barr 2009, Lengyel − Rechnitzer 2004, Musgrave − Musgrave 1989, Stiglitz 2001, Szabó − Hámori 2006, Vigvári 2008).

2. Interpretation of loss and risk aversion in state-financial decisions

From the point of view of the state, we can interpret the phenomenon of loss and risk avoidance in two ways: from the aspect of relations to the external environment on one hand and the aspect of the internal environment of state economic management on the other. The relations to external (political, economic, social and natural) effects can, under certain conditions[2], approach the expectations of the individual. In certain situations, the decision-making mechanism of the state can be motivated in minimizing the individual's losses, since in a given case; they are just directed to this. The establishment of the historic state, its existence presume the essential demand of the individual for security, his inclination to avoid losses and risks. For

[2] We have borrowed the informational conditions from the Tiebout Hypothesis, which we have taken as the informational background for state household decision-making processes (Vigvári 2008).

the individual gives up part of his / her freedom to make decisions when joining the risk community, in order to increase his / her security and welfare.

In case of discretional decisions, relation to the demands appearing in the external environment is very strong and the decision can depend on special reference points: in financial sense it is of base approach and in economic-psychological sense it is path dependent[3]. In case of decisions of such informational background, the state's decision-maker is forced to identify itself with the loss of citizens; therefore it discerns loss as early as during the preparation of the decision and wants to move towards a lesser loss from the beginning. From the behavioural-economic point of view, presuming Kahneman and Tversky's value function, the state originally moves within the range of loss. Depending on the reference framework shaped during the preparation of decision, virtually it is ready to make the move from any reference point. To put it in neoclassical terminology, in this situation the state decision-maker is necessarily risk-favouring (Kahneman − Tversky 1979, Thaler et. al 1997).

Specific examples include state expenditure decisions made in relation to wars, environmental catastrophes or those made in connection with economic bail-out packages, where the state runs a great risk spending high-value amounts, though at an ignorable probability of occurrence4. However, we presume the phenomenon in the case of decisions made in connection with discretional operational expenditure policies regarding those of below mean or, from the budgetary point of view, ignorably small sizes, however, made in outstandingly large numbers, which we study in the framework of empirical research.

Normative state-financial decision can be opposed to discretional decision-making. It is necessary to link state resources with expenditure policy, which is built on the informational basis of politics and sectoral policies and on the analysis of the external environment. Raising funds and their addition to expenditure are generalizable, irrespective of the political system, and are separated from the discretional decision-making mechanism. The aspects of sustainability of the internal environment of the state structure appear besides political and sectoral decision-

[3] To support path dependence empirically, a large number of laboratory experiments have been carried out by research groups dealing with this topic. A very interesting and elucidative series of experiments were demonstrated by R. Thaler. They analysed rounds of television quiz programs utilizing both neoclassical utility functions and the value function of prospect theory. During laboratory experiments related to analyses, they demonstrated the path dependence of decision-making in risky situations (Post et al. 2008).

[4] For this situation, based on the statistical distribution, the term "tail risk" is used.

making, which are typically financial-budgetary decisions. In the course of preparing budgetary decisions, the state's institutional system creates reference points of normative character, and the bargain-mechanism of rule-based planning of budget enforces a proportional distribution of resources among sectoral interests.

In behavioural-economic sense, assuming Kahneman and Tversky's value functions, the state moves in a profit range when imposing taxes. In the positive value range, systematic errors and distortions disclosed by behavioural economics can be identified in decision-making – the behaviour of the state is necessarily short-sighted and loss-avoiding. In neoclassical terminology, when making tax regulations and imposing taxes, the state's decision-maker acts in a risk-neutral and risk-avoiding way, therefore the state's income-political risk-taking should be definitely encouraged.

Taking into account the fairly large number of discretional decisions, we can presume that the state is ready to spend money on environmental risks rather than raise taxes. All this can be as well interpreted as a decision motivation aiming to minimize environmental losses. In this interpretation, one average income-raising state decision (decision unit), calculable depending on the theoretical economic approach, is due to a given discretional operational cost-related decision (decision unit).

Further on, we shall refer to the loss-avoiding motivations of discretional decisions as the inherent risk of operational budgetary processes. We use the term to express the risk content of state-financial, operational decision-making situations resulting from the environmental conditions and its degree deducible from theoretical assumptions.

Thaler introduces the utility function for loss aversion in a neoclassic basis, intuitively, with a rule of thumb applying a coefficient of 2.5, which can be used for state incomes and expenditures. Studying the value function of prospect theory we can produce a similar situation. The λ coefficient per unit of money, connected with expenditures and expressing the extent of loss aversion will be the 2.25 fold of the unit connected with incomes (Thaler et al. 1997).

Incomes and expenditures originated from coefficients expressing the extent of loss aversion generate theoretical operational deficit. By intuitive, neoclassic treatment, its extent, irrespective of the size of budget, projected onto balance sheet total of operational expenditures is 60 %, using the value function of prospect theory it will be 55.6%. Further on, we shall use theoretical operational deficit to express the extent of inherent risk.

We have given preference to the analytical framework suggested by behavioural economics for the following reasons:

- In the course of analysing operational risks, we rejected the necessity of analysing property, since the chance of occurrence of risk events and its potential effect is irrespective of the financial size of it. The changes in operational environment it decisively depends on, for the description of which the value function of prospect theory provides a suitable analytical framework (Benartzi − Thaler 1995, Chernobai et al. 2007, Kahneman − Tversky 1979, Thaler et al. 1997).
- We have taken the risk community of the modern state as non-property-based, so the concept of profit and loss, related to the reference points of the external and internal environment is more suitable for the description of state-financial processes of decision-making (Benartzi − Thaler 1995, Kahneman − Tversky 1979, Kahneman − Thaler 2006, Post et al. 2008, Thaler et al. 1997).
- The risk community of the state is not voluntary; consequently, undertaking some loss is an inevitable, certain event. The value function of prospect theory offered an obvious and suitable analytical framework to the explanation for situations containing certain loss as well (Kahneman − Tversky 1979, Post et al. 2008).

The budget bearing a relative operational risk of 0% and treated on a completely normative basis can be identified at the macro-level in the course of planning and implementation of central budgets. However, the equilibrium stated in a budgetary golden rule is rarely fulfilled by the elementary budget drawn up by institutions at the micro-level, and sectorial balance-sheets at mezo-level. The category introduced for operational risk can be well applied at the level of local governments, where we can presume that state decision-making is attached to its external environment far more intensively. We can also presume that local discretional state-financial decision-making is more heavily influenced by the direct reference points of the external environment than the normative framework of decision-making mediated by the central budget.

3. Results of empirical research

Instead of macroeconomic role-taking of the state, we have focussed our research on the mezo-level: the system of subnational governments. A wide range of secondary, duly detailed data has been available about Hungarian local governments. These data can be made suitable for arranging them in a data group according to a theoretical approach and defining the statistical variables. Therefore we have carried out our empirical research on the universe of Hungarian institutions (Sándorné 2009, 2014, Vigvári 2009).

We have obtained the basic data containing the operational incomes and expenditures related to the total Hungarian system of local governments from the reports of the Hungarian State Treasury for 2003-2012. We had to handle the essential content-related and accounting technical differences resulting from the specificities of the legal responsibilities of the Hungarian local governmental system and from the extreme deviations between the operational sizes of the individual local governments. That is why we left the regional (capital city and county) local governments out of the scope of local governments studied. The outstanding operational size of Budapest, its national weight characterized by an 11.6% mean chronological rate was another argument for leaving it out of the empirical research. The large number of the local governments in small settlements did not cause any substantial problems in the process of treatment of data sources.

The pieces of information collectable about the local governmental system from the State Treasury are burdened by chronological inconsistencies. Difficulties were caused by changes in the structure of items of book-keeping and in the mandatory contents of the individual items on the one hand, and the administrational categorization of settlements on the other. Typically, changes in the status of public administration involved merger or separation of settlements, which changed the number of local governments obliged to give accounts. Following up changes demanded the chronological reconstruction of changes in financial and budgetary regulations. Owing to this, chronological retrospection caused serious difficulties, which, by limiting the period of time, could be more or less resolved. The available Treasury information back to 2003 was reliably interpretable. However, the content of data of Treasury reports before this budgetary year changed to such an extent that the identification of data and ensuring their comparability would have needed a disproportionally great effort compared to the presumable information content. Therefore, we indicated 2003 as a year for starting the study. The Hungarian system of local governments has made

a radical turn since 2013, the process of decentralization beginning in 1990, burdened by continuous political and sectoral policy conflicts, completely broke. The solution of problems since 2013 has been taken over by a centralized management, creating several ministerial background institutions. A substantial investigation of the effects of this reform needs a longer period of time, which could be subject to a following research. Because of this, we finished our study by the year of 2012 and have not processed the next accounting years closed by reports.

For time-related comparability we fixed the settlement structure of 2003, then the data of the meanwhile separated settlements according to the state in 2003 and registered them united for the original list of settlements in each analysed year. In case of settlements merged in the meantime, we cancelled the data of the settlement that was absorbed into the other for 2003 as well and stated the value data at the adopting settlement in each analysed year. By the rearrangement of value data we achieved that the analysed sets of data have been included in a uniform structure regarding a period of 10 years. In this way, by leaving the regional local governments out, our analysis included 3166 settlements of the Hungarian local governmental system concerning the period between 2003 and 2012.

Based on the theoretical theses of behavioural economics in relation to loss aversion we have put the following statements:

H1. Discretional state-financial decisions result in at least the level of relative theoretical operational risk (55.6% of inherent risk).

At the same time, the inherent risk is necessarily curbed by the regulation-based decision-making environment to a tolerable level, the concrete value of which – typical of the universe of Hungarian local governments – we have been searching for.

Without the mechanism of action of normative decisions budgetary system could fail:

H2. Because of this, normative state-financial decisions should keep relative operational risk, generated by discretional decisions, far below the level of the inherent risk. Theoretically, operational risk can be mitigated by normative decisions to 0 %.

We measured the individually calculated relative operational risk of Hungarian local governments for a given t year in the proportion of the difference between fulfilled operational income and estimated expenditure and fulfilled estimated expenditure (ROR index) of each local government. The proportional indices of relative risk bore unique information regarding the decision-making entities, which we processed for the whole universe. The statistical characteristics concerning

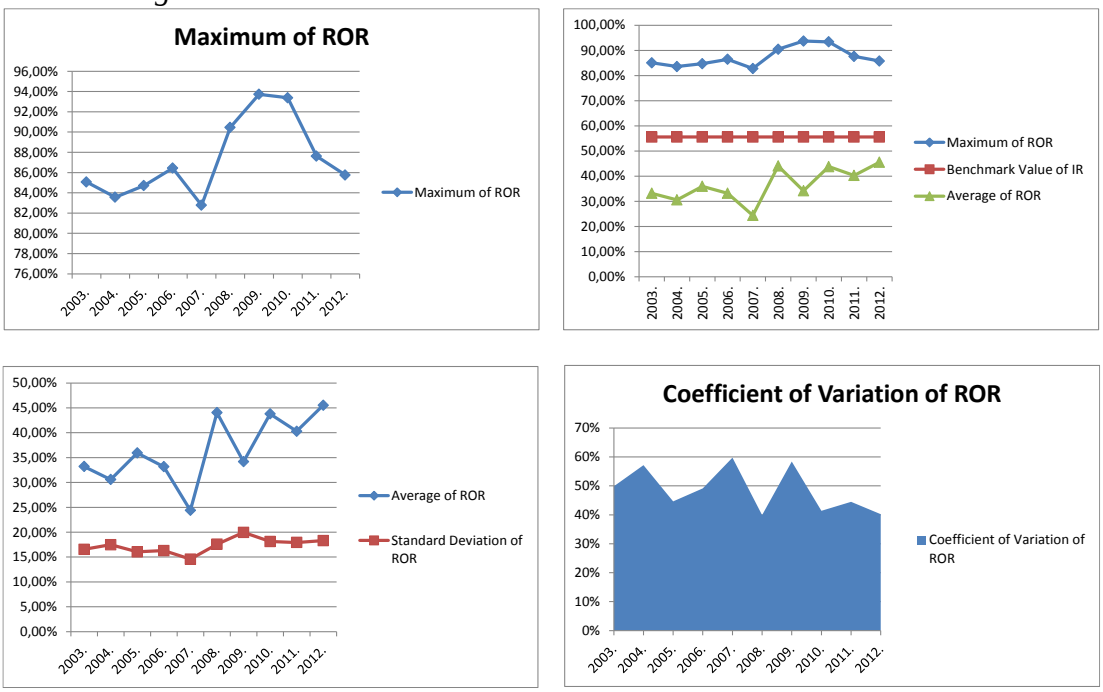
the whole universe are demonstrated by the simple position indices of the variable in Table 1 and in Figure 1.

Table 1 Universal Characteristics of ROR Variable between 2003-2012

Universal Characteristics per Year of *ROR* Variable	**2003.**	**2004.**	**2005.**	**2006.**	**2007.**
Maximum of *ROR*	85,07%	83,57%	84,71%	86,44%	82,78%
Benchmark Value of IR	55,56%	55,56%	55,56%	55,56%	55,56%
Average of *ROR*	33,21%	30,59%	35,94%	33,18%	24,39%
Standard Deviation of *ROR*	16,55%	17,48%	16,04%	16,30%	14,57%
Coefficient of Variation of ROR	50%	57%	45%	49%	60%
Universe (N)	3 166	3 166	3 166	3 166	3 166
Risk Events (n)	2 942	2 851	3 030	3 005	2 868
	2008.	**2009.**	**2010.**	**2011.**	**2012.**
Maximum of *ROR*	90,46%	93,72%	93,39%	87,61%	85,76%
Benchmark Value of IR	55,56%	55,56%	55,56%	55,56%	55,56%
Average of *ROR*	44,03%	34,18%	43,78%	40,30%	45,52%
Standard Deviation of *ROR*	17,57%	19,96%	18,12%	17,93%	18,31%
Coefficient of Variation of *ROR*	40%	58%	41%	44%	40%
Universe (N)	3 166	3 166	3 166	3 166	3 166
Risk Events (n)	3 111	2 911	3 105	3 080	3 100
Time Series Average of:	**Time Series Characteristics of ROR between 2003-2012**				
Maximum of *ROR*			*87,35%*		
Benchmark Value of IR			*55,56%*		
Average of *ROR*			*36,51%*		
Standard Deviation of *ROR*			*17,28%*		
Coefficient of Variation of *ROR*			*48%*		
Risk Events (n)			*3 000*		

Source: own construction based on Hungarian State Treasury balance sheets

Figure 1 Universal Characteristics of ROR Variable between 2003-2012



Source: own construction based on Hungarian State Treasury balance sheets

To measure the level of relative operational risk resulting from the background processes forming the microenvironment of discretional decisions, we used the mROR indicator (modified relative operational risk indicator), which expresses the rate of difference between local tax incomes and tangible expenditures projected onto tangible expenditures. Changes in modified relative operational risk indicator between 2003 and 2012 are shown in Table 2 and in Figure 2.

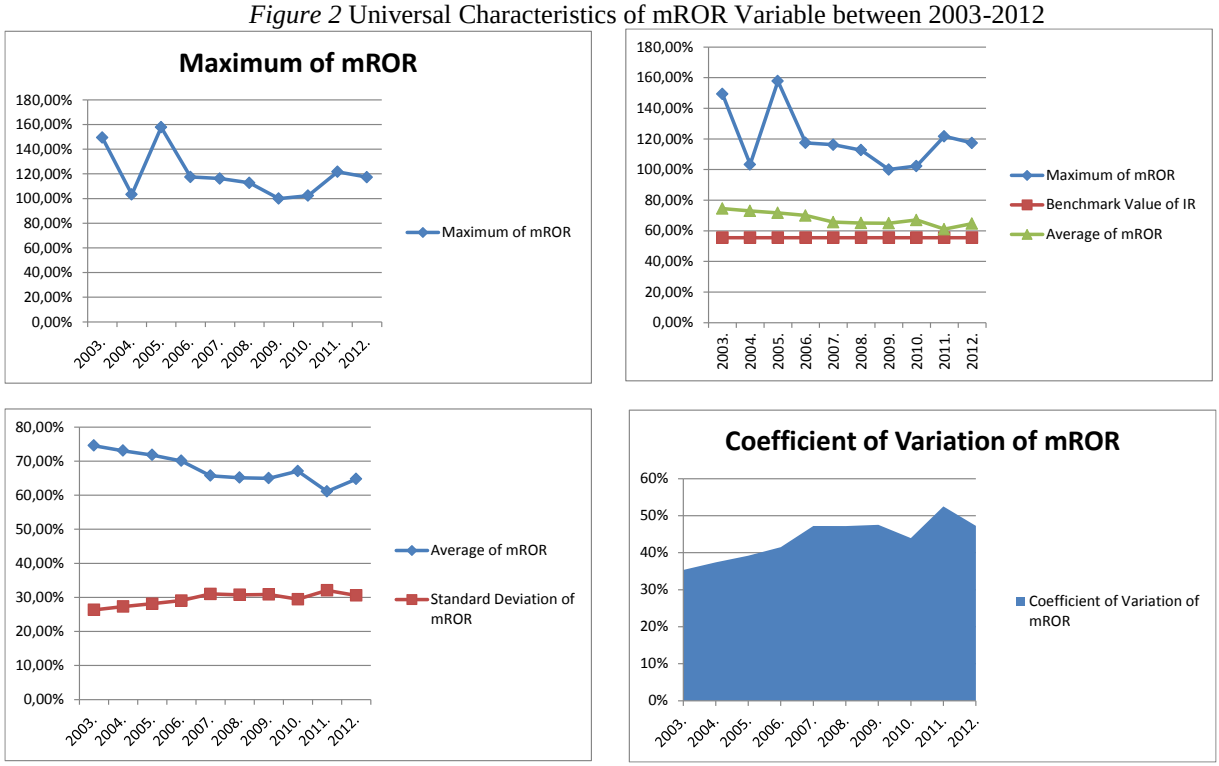
Table 2 Universal Characteristics of mROR Variable between 2003-2012

Universal Characteristics per Year of mROR Variable	**2003.**	**2004.**	**2005.**	**2006.**	**2007.**
Maximum of *mROR*	149,41%	103,32%	157,79%	117,44%	116,21%
Benchmark Value of *IR*	55,56%	55,56%	55,56%	55,56%	55,56%
Average of *mROR*	74,53%	73,04%	71,77%	70,05%	65,68%
Standard Deviation of *mROR*	26,34%	27,31%	28,13%	29,07%	31,02%
Coefficient of Variation of *mROR*	35%	37%	39%	42%	47%
Universe (N)	3 166	3 166	3 166	3 166	3 166
Risk Events (n)	2 942	2 851	3 030	3 005	2 868
	2008.	**2009.**	**2010.**	**2011.**	**2012.**
Maximum of *mROR*	112,74%	100,00%	102,32%	121,70%	117,34%
Benchmark Value of *IR*	55,56%	55,56%	55,56%	55,56%	55,56%
Average of *mROR*	65,13%	64,95%	67,06%	61,07%	64,72%
Standard Deviation of *mROR*	30,74%	30,87%	29,47%	32,07%	30,58%
Coefficient of Variation of *mROR*	47%	48%	44%	53%	47%
Universe (N)	3 166	3 166	3 166	3 166	3 166
Risk Events (n)	3 111	2 911	3 105	3 080	3 100
Time Series Average of:	**Time Series Characteristics of *mROR* between 2003-2012**				
Maximum of *mROR*			*119,83%*		
Benchmark Value of IR			*55,56%*		
Average of *mROR*			*67,80%*		
Standard Deviation of *mROR*			*29,56%*		
Coefficient of Variation of *mROR*			*44%*		
Risk Events (n)			*3 000*		

Source: own construction based on Hungarian State Treasury balance sheets

The time series average of the relative operational risk (mROR) from the discretional decisions at the mezo-level between 2003 and 2012 at the observed Hungarian universe of local governments came to nearly 68 %. The mean yearly value at the mezo-level each year exceeded the theoretical value of 55.6 % (IR) calculable according to the value function of prospect theory, presuming loss aversion. At the same time, the level of risk (ROR) calculated for the total operational budget, which also expresses the mechanism of action of normative state-financial decisions, was 37 %. The mitigating effect of regulation-based decisions can be well perceived; at the same time, the mean level of decisional micro-environment, far higher than the inherent risk, is a warning sign.

Figure 2 Universal Characteristics of mROR Variable between 2003-2012



Source: own construction based on Hungarian State Treasury balance sheets

We studied this mechanism by the simultaneous application of several risk indicators as well. The evaluation of risk introduces an asymmetric distribution of operational risk according to the categories of operational size in relation to operational expenditures. According to the risk evaluation carried out, the 64-80 % of the value amount of operational risk (OR) was concentrated in 7-13 % of local governments in the period of 2003-2012. The high relative operational risk level and its asymmetric distribution of value amount direct our attention to the contradiction which developed between the efforts of local governments towards their environments and the sustainability of their operational balance and financial resources in Hungary between 2003 and 2012.

4. Suggestions and further directions of research

Theoretical possibilities of research present themselves on the bordering surfaces of the local governmental sector, first of all in connection with modelling the institutional capacities becoming necessary in the direction of local markets, local societies and local natural values. What quantitative and qualitative characteristics does the optimally formulated local

governmental institutional system have, which generates the lowest possible absolute operational risk at the mezo-level? The other bordering surface is the regulatory, controlling and financing system. Essentially, we can ask the same question as before: is there a normative financing model which creates the lowest possible absolute operational risk at the mezo-level regarding local governments? The problem can be approached from many kinds of directions. In my view, a regulatory and institution-building approach underpinned theoretically, treating information with a "rule of reason" attitude, combined with the transformation of financing system stressing the elements of being stuck to rules, can considerably mitigate the absolute and relative operational risk of local governmental system.

Apart from further development of theoretical frameworks, research should be deepened in the direction of methodology as well. The operational risk indicators already established can be divided further. Based on the system of indices accepted in financial analyses, complex, detailed sub-indicators can be constructed, by which we can identify the detailed characteristics of operational risk processes.

The introduced methodology can be applied for the empirical analysis of the local governmental system of the individual states in a complex way. The selection of data sources, getting to know the regulatory system of the particular state, the identification and testing of statistical variables required for the use of the methodology involve serious challenge. The analytical methodological framework, suitable for the international comparison of operational risks, can be made up by the utilization of the experience of studies conducted in a large number at the sectoral level. This direction of development extends the practical application of the method as well, and may yield further theoretical and methodological results that cannot be planned in advance.

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14. Reforming the Conceptual Framework for Financial Reporting

Zsuzsanna Ilona Kovács

The objective of financial reporting is to provide financial information that is useful to investors and creditors in making their decisions about allocating their resources. Intangible assets are very difficult to integrate into current financial reporting framework due to some of their specific characteristics. The preparers of the most widely used International Financial Reporting Standards (IFRS) set the most important definitions and recognition criteria in the Conceptual Framework for Financial Reporting. However, the application of these definitions and recognition criteria lead to a very limited set of intangible assets presented in financial statements.

The IASB is currently running a project with the aim of reforming the Conceptual Framework. Revising the definition of an asset constitutes a part of this project. The standard setters (as always) place great emphasis on addressing the public and asking for the opinion of the profession during the course of the project of great importance. Opinions given by accounting professionals show great differences, but the fact is that financial reporting paradigm is presently undergoing essential changes.

The significance of the Conceptual Framework project is that it affects such topics that are embedded in the core of the system (such as the definition of assets and recognition criteria). What is more, the process demonstrates such a new way of creating standards that incorporates the active role of the global audience of financial reporting. The aim of this paper is to summarize the reasons of why the reforming of the Conceptual Framework has become inevitable and to present the most recent development related to this field.

Keywords: financial reporting, intangible resources, paradigm shift

1. The heart of the problem

Financial reports are in theory designed to provide all relevant information that is necessary for the users to make their financial decisions. However, present financial accounting regulations seem to provide narrow space for intangibles on balance sheets compared to their significance in economy. International Financial Reporting Standards issued by the International Accounting Standards Board (IASB) are applied in more than a hundred countries including the member states of the European Union. IFRS define recognition criteria that lead to a very limited set of intangible assets presented in financial reports, which seems to be a great contradiction. Lev (2003) summarizes the consequences of the mismeasurement or deficient reporting of intangibles:

1. significant deterioration in the information content of key financial statement items
2. managers looking for alternate measures of corporate performance for internal purposes

3. systematic undervaluation of companies that are intensive in intangibles (excessive cost of capital)
4. gains are misallocated to insiders because of the great information asymmetry.

Mortensen (2012) argues that there is a large and increasing need for improving the insight into the role of intangibles in the economy because we know that intellectual capital is a decisive factor of economic growth, but our knowledge of the process is far from satisfactory. The incompleteness of the data affects the system of financial reporting as well.

The IFRS Conceptual Framework for Financial Reporting is an underlying document of the standards. It sets the basic definitions for the elements of financial reporting (asset, liability, equity, income, expense) to ensure a uniform understanding of these. It explains the meaning of those concepts that are commonly used and accepted by the preparers of IFRS financial statements, such as the recognition criteria for the items. The Framework describes the fundamental qualitative characteristics of useful financial information as relevance and faithful representation. Comparability, verifiability, timeliness, and understandability are the enhancing qualitative characteristics (IASPlus (a), n.d.).

Relevance and faithful representation are basic qualitative characteristics of financial information according to the Framework. This means that financial reports need to contain all relevant information that could affect the decision-making process of the users (the cost constraint must also be considered). One could argue that the complete set of intangible resources carry relevant information about the financial position of the reporting entity, so it should be included in the financial statements. However, faithful representation requires information to be complete, neutral and free from error. The greatest challenge regarding intangible reporting is creating a balance between relevance and faithful representation, because information on intangibles is sometimes regarded highly subjective. Present regulations are rather conservative and give more emphasis to faithful representation (or reliability) (Gröjer 2001).

The recognition criteria set by the Framework define rules that specify which items are incorporated into financial reports. Items that satisfy the recognition criteria are presented on the balance sheet or the income statement. According to the Framework an asset is recognized when *'it is probable that the future economic benefits will flow to the entity and the asset has a cost or value that can be measured reliably''* (IASPlus (a), n.d.).

The Conceptual Framework for Financial Reporting also defines the basic concepts of reporting and states the following definition for asset:

"An asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity" (IASPlus (a), n.d.).

The definition of intangible assets is included in International Accounting Standard 38 *Intangible Assets*:

"An intangible asset is an identifiable non-monetary asset without physical substance" (IASPlus (b), n.d.).

Internally generated intangible items hardly meet the recognition criteria because the economic benefits they incorporate are associated with high risk (i.e. the case of research costs). Measurement is another issue that brings a great challenge in case of these types of resources. Furthermore, intangible resources like competence, experience and ideas of the workforce or technological expertise are not assets *controlled* by the companies. Under current regulations, the only types of internally-generated intangible resources that appear on the balance sheet are development costs and know-how (protected by contract). Intangible assets that are of external origin (purchased, acquired as part of a business combination or by way of government grant) are much easier to place in financial reports as they are traded on the market, which makes them easy to identify, control and measure (i.e. brands, patents, trademarks, customer lists). However, entities are entitled (sometimes required) to enclose information on all items that are essentially assets but fail to meet the recognition criteria in case knowledge of the item is relevant to the evaluation of the financial position.

2. The new framework

Failing to recognize internally generated intangible assets causes difficulties in the measurement of the entities' performance and impedes the accurate assessment of returns related to these resources. Investors on capital markets need financial statements that give more relevant and complete information. To achieve this, the reporting Framework needs to be modified by the accounting profession:

"*Failure to do so will see it taking on the responsibility to develop and maintain standards and reporting that increasingly deal with a smaller and smaller share of an investor's value – not a prescription for a healthy and growing profession"* (IMA 2010, p. 3).

There are of course opponents to the modifications of financial reporting regulations. Upton (2001) quotes several professionals who emphasize the dangers of reforms. Some

consider that standards do not allow the recognition of certain items because this does not correspond with the objective of financial reporting. From this point of view, putting (internally generated) intangibles on the balance sheet would confuse users and lead to a greater uncertainty and deterioration of the usefulness of financial reports:

„*Monkeying with financial statements… is a terrible idea. Investors have 500 years of practice interpreting financial statements while learning to understand…and value our more than $60 trillion in total assets. In doing so, they have developed methods to adjust for many of the anomalies…that emerge from our archaic double-entry bookkeeping practices from time to time… Balance sheets are for stuff…not people or ideas*" (Rutledge 1997).

Skinner (2008) also concludes that proposals for reforming accounting and disclosure practices for intangibles are based on claims that are unfounded. He argues that financial markets are currently doing well financing knowledge-based enterprises and there is no need to mandate any further disclosure on intangibles. Standard setters are well aware of the danger of manipulation in case of valuing such items that does lack an active market or trading transactions as helping tools in estimates. What is more, the supporters of the prevailing system can also argue that there are already several types on reports other than financial statements elaborated to cover the invisible intangible property of entities. However, disclosure in the notes about some items that provide relevant information on the financial position of the entity does not compensate the failure to recognize them on the balance sheet. Notes are deemed to provide additional information on capitalized items.

Reforming of underlying financial reporting regulations is now on the agenda of standard-setters. According to Shortridge and Smith (2009), financial reporting is undergoing one of the greatest revolutions ever since Pacioli invented double-entry bookkeeping. The process is triggered by the transition of the industrial economy to information economy, with intangible assets in the spotlight. Reform is inevitable as traditional accounting and reporting systems are lagging behind the rapid change of business environment. The basis of the prevailing accounting paradigm of IFRS is embraced by the Conceptual Framework for Financial Reporting, which was first issued in 1989 and remained unchanged until 2010.

The IASB is currently running a project with the aim of reforming the Conceptual Framework. Chapters regarding the objective of financial reporting and the qualitative characteristics of useful information were renewed and published in 2010. The remaining chapters are currently being revised in a running project. Revising the definition of an asset constitutes a part of this project. The standard setters (as always) place great emphasis on addressing the public and asking for the opinion of the profession during the course of such a

project of great importance. A Discussion Paper (DP) has been published in 2013 which presents the directions of possible new approaches. The DP has been followed by an Exposure Draft in 2015 (Orrell 2015). Separate sections discuss the definitions for the elements of financial statements (asset, liability, equity etc.), recognition and measurement – those topics that are of great importance when taking intangibles into consideration (Table 1).

Table 1 Original and proposed definitions

	Existing Definitions	**Proposed Definitions**
Asset	An asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity.	An asset is a present economic resource controlled by the entity as a result of past events.
Liability	A liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits.	A liability is a present obligation of the entity to transfer an economic resource as a result of past events.
Economic Resource	[no existing definition]	An economic resource is a right that has the potential to produce economic benefits.

Source: Orrell (2015)

One significant change in case of the asset definition is that 'expected future economic benefits' have been removed from the definition. This way, it emphasizes that the asset is the economic resource itself, not the imbedded benefits. The only thing that matters in case of an 'economic resource' (proposed new definition) is that it has the potential of providing benefits, there is no probability criterion included. The recognition criteria are to be reformed as well, requiring entities to recognize assets and liabilities when certain criteria are met. These criteria are defined based on the principles of relevance, faithful representation and the cost constraint – meaning that benefits should exceed the cost of providing information (Orrell – Streaser 2013, p. 7).

Will more internally generated intangible assets be recognized under the new definitions and criteria? These resources still need to be controlled by the entity, which is not true in case of human resource, for example. The fact that future economic benefits do not need to be 'probable' only 'potential' does not widen the scope in case of intangibles because still, these resources should be identifiable (tradable) and entities should find reliable measurement methods in order to place them on the balance sheet. However, the new focus will clearly be measurement in the debate regarding intangible reporting. In case of some assets it could

occur that they correspond to the new asset definition but traditional measurement methods (e.g. historical cost) do not provide an accurate base for determining the value they represent for the entity. The conclusion is that although there will be new recognition criteria, the result will probably be the same for the case of internally generated intangible assets.

3. The significance of the modifications

Introducing fundamental changes in the prevailing financial accounting paradigm is a great challenge for all participants of the process. The standard setting bodies are constantly encouraged and sometimes criticized by the public to resolve the reporting anomalies that encumber the preparation of financial statements. On the other hand, reporting entities themselves and also financial analysts, investors and other users of the financial statements require stability and predictable regulatory surroundings. Consequently, decision-makers always act with great cautiousness and diligence when moving on in the process of standard-setting.

What will the above described modifications achieve? Many researchers draw attention to those intangible resources that are missing from the balance sheets currently. Entities' expenditures on acquiring, maintaining and developing these are charged against the income of the current financial year in most cases, even if these expenditures are performed in order to achieve benefits during several future financial years. Some argue that the growing gap between the book value and market value of enterprises somehow indicates the magnitude of these missing resources or 'intangible capital' (Sveiby 2001).

Skinner gives an extensive list of reasons why intangible resources fall out of the scope of traditional financial accounting (Skinner 2008, p. 203):

1. Many intangibles are not separate, saleable or discrete items;
2. Well-defined property rights associated with tangible and financial resources often do not extend to intangibles;
3. There are no liquid secondary markets for many intangibles, making it difficult to reliably measure the value of these resources;
4. It is often difficult to write fully-specified contracts for intangibles.

Internally generated intangible capital (i.e. human resource, processes, customer lists, research costs) will certainly not be presented in the future either on the balance sheet except for those items that have been recognized under the original definitions (development cost or

know-how that is protected by the law). The significance of the Conceptual Framework project lies in that it affects such topics that are embedded in the core of the system (such as the definition of assets and recognition criteria). What is more, the process demonstrates such a new way of creating standards that incorporates the active role of the global audience of financial reporting. The outcome will probably be a new Framework that reflects the opinion of a very wide range of standard users. We can expect new regulations that are more user-friendly, and easier to apply consistently. This leads to a higher level of comparability of financial statements, which is the overall objective of international standard-setting.

4. Conclusion

The Board is taking small steps in the course of the reform, which is understandable taking into consideration that they are about to change a Framework that is built on traditions followed for centuries. Yet business has gone through such significant changes that leave them with no other option but to make some kind of reform.

The new forum of controversy regarding intangibles will be the measurement process. No definition or recognition criteria will exclude explicitly internally generated intangible items, the key issue will be measurement. Historical cost approach is not a real option in case of these resources, so fair value measurement will again be one of the focus areas. The new challenge for financial reporting will be the invention of such measurement methods that are applicable for intangibles and provide stakeholders with information that is not only relevant but faithful and free from bias.

The accounting profession is indeed in the middle of a crisis as the reporting Framework is strained by accounting anomalies deriving from information economy. Standard-setters are in the process of seeking new alternatives, but few rather cautious steps have been taken. The process could be described as an evolutionary change but as demand for more relevant financial reports grow, the possibility of an emerging new reporting paradigm cannot be excluded.

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15. Role of Strategy in Shaping the Flexibility of Resources in Small and Medium Entrepreneurships

Maciej Teczke

Unpredictable environment, shortened life cycles of products and global competiveness, even on local markets strongly affects small and medium entrepreneurships. The article discusses importance of strategic management from the resources perspective in small and medium entrepreneurships. Article examines the problem how choice of strategy influences utilization of tools to improve flexibility of companies resources. In order to answer this question article shows results of research based on thirty interviews with managers, CEOs and owners of the companies. Because of length, complexity and need of perfect knowledge about the companies, sample was chosen in non-probability sampling technique "convenience sampling". That gave opportunity to conduct deep, honest interviews. Companies have been split in to three categories: manufacturing companies, trade companies and service companies. Result shows that there are differences in these aspects between companies of different types. The most significant differences are noticeable in terms of significance of resource and tools utilized to increase flexibility of the company. These findings affirm that flexibility is becoming important part of strategic management. Type of company strongly influences decision making process, which is correlated with strategy and significance of each type of resources.

Keywords: flexibility, resources, management, strategy

1. Introduction

All companies, including small and medium-sized, are now in a turbulent environment, which is associated with high level of risk involved in decision making process. The most important factors affecting the environmental variability may include, inter alia, the fast pace of technological change, and fast and easy access to information, including an economic nature. Today's small and medium-sized enterprises must also meet other challenges that arise from (Faulkner − Bosman 1996) globalization of markets, development of new technologies, the ongoing trend towards consolidation of entities, social change, increased sensitivity to environmental problems, changes on the political map of the world and other factors. One of the responses of the management of small and medium-sized enterprises to the challenges of doing business can be a conscious shaping of their flexibility, especially in the area of resources and strategies.

2. Literature overview

Flexibility is defined differently in the literature. Ansoff (1985) defines flexibility as an attribute that allows the organization to cope with changes in the environment, without trying to be influenced, but responding. Listed by him types of flexibility are: internal, defensive, offensive, and the outer. Eppink (1998, p. 84) defines flexibility as an *"ability of organization to be more resistant to external or unpredictable changes which puts it in a better position to be able to successfully respond to these changes"*. It is a component of the full capacity to respond to changes. Eppink distinguishes three types of flexibility: operating on the current activities of the company, competitive and strategic. Perfect flexible organization has the following characteristics (Eppink 2002, p. 391):

- the ability to keep up with changes in the environment and develop faster than their competitors,
- efficient customer feedback system for learning and responding to their expectations,
- short decision-making processes - flat structure validation executive employees,
- personnel accustomed to the changes (this point is the most difficult to achieve).
- To be able to implement the concept of management based on the flexibility of resources must be met several requirements. The organization must have the ability to control and make changes. That this condition is satisfied for an appropriate organizational culture and structure flexibility.

According to Sikorski (1999, p. 260) flexible organization organizational culture requires employees to readiness to change and innovation. It consists of:

- Ability to respond adequately in situations not routine. The employee should be able to take decisions in a state of uncertainty based on their knowledge and experience,
- creation of a dynamic network of cooperative relationships (an example can be task forces),
- orientation to the process and the results, focusing on the client,
- perception of the environment as a set of opportunities rather than threats
- empowerment of employees by favoring management style,
- trigger creativity among employees.

Flexible structures understood as the ability to adapt quickly or as natural variability is not a uniform phenomenon. Krupski has defined (2005 p. 76) five types of flexible

organizational structures. The first is the flexibility resulting from the modular organization. Examples of such structures are a holding-type organizations, divisional organization or network organizations. The flexibility of these forms due to the fact that the various elements have distinct boundaries enables to identify what is the effect of their action. The second type of flexibility is flexibility through the personal characteristics Chief Executive. Companies managed by cooperative presidents seek to exploit opportunities that often make changes faster than the employees are able to prepare for this. It is possible that in this case, organization is flexible at the strategic level while at the tactical or operational level is fossilized.

Incremental model of shaping organizational structures flexibility results from the ambiguity of internal organization. It occurs most often in the small businesses, for which the organization does not matter. This form of organization is often very entrepreneurial, focused on strategic success factors. Dynamic organization growth often results in changes in management model; the model of Greiner called it crisis of leadership.

Consciously shaped organic relationship within the organization is another specified model. In spite of the similar effect as in the previous approach, in this case it is a conscious decision and not the result of neglecting organizational structure. Not everywhere it is possible to implement this model. These are often companies based on innovation and human capital, research-based, with innovation or advisory character.

There could be situation in which the organization goes through frequent changes of ownership, but among these changes is a typical functional organization. This type of flexibility is the simplest but also the most common. Not affecting company's strategy, but it causes a lot of interest in changes among the crew.

The last type is the flexibility is resulting from the specific nature of the industry, which causes the finished project after another has little in common with the previous one. Example could be the construction industry, where it is difficult to traced the reproducibility.

3. Research methods

There are still not many studies concentrated on flexibility of companies. This study took the form of a structured questionnaire. The answers were given by thirty people from mid to high management levels. Those who responded to the questionnaire were chosen by convenient selection. This made it possible to reach the people who have a lot of information about the functioning of the organization and the strategic actions taken by these

organizations. Respondents were divided in such a way that the study involved ten representatives of service companies, production companies and trade companies. This allowed comparison of results between different sectors.

The questionnaire consists of both open and closed questions. In total respondents answered twenty questions divided into three categories: corporate strategy, risk, corporate resources. This paper presents the results only part of the broader piece of research.

The results are a synthesis of the data collected from the thirty respondents, both divided by sectors and as well as the aggregate results for the entire sample test. This allows to compare the results.

Article focuses on two main issues: Factors influencing the choice of the strategy and its correction, and on the resources of the surveyed enterprises, their importance and utilization of tools that can increase the flexibility of the organization.

4. Strategy analysis

The first element of the strategy analysis of the surveyed enterprises was answering the question: "What Mr/Ms company takes into account in formulating its business strategy?" Respondents had to choose from a set of prepared answers. The results are presented in tabular form (Table 1).

Table 1 Factors taken into account in formulating business strategy

FACTORS	TOTAL	PRODUCTION	TRADE	SERVICE
Changes in the local market	23	5	9	9
Changes in the international market	9	4	3	2
Observed actions of competitors	22	8	9	5
The desire to reach your goals	21	6	8	7
Strengths and weaknesses of the company	14	5	3	6
Having place of social changes	2	0	0	2
Changes in regulations	11	3	1	7
Inspiration from foreign markets	10	7	2	1
Possible market opportunities	14	4	6	4
Other elements (what?)	0	0	0	0

Note: number of enterprises
Source: own calculation

In total, the most important factors to be considered are “changes on the local market”. The next answers in order of the most popular are “the observed actions of competitors” and “the desire to reach your goals”. Other factors of the respondents do not play such an important role. By sector, it can be seen that in this case the answers are quite similar. Both in

the case of service enterprises and trade enterprises “changes taking place on the local market” plays the most important role. Definitely a lower score of “changes on the international market” can be explained by the size of the surveyed companies, and thus a smaller scale of operations. For manufacturing companies “observed actions of competitors” took the most important role in the formulation of strategy. Only two companies in the service sector have recognized the "social changes that take place" as an important element which influences the strategy. In this case, it may be response to the high sensitivity of this sector to the ongoing dynamic changes that the market must respond quickly. Most of the surveyed companies formulate a strategy for a period of one to two years (Table 2).

Table 2 period for which the strategy is formulated

PERIOD	TOTAL	PRODUCTION	TRADE	SERVICE
Less than one year	7	2	4	1
From one to two years	10	3	2	5
From two to three years	4	0	2	2
Three to four years	1	1	0	0
From four to five years	3	1	1	1
More than five years	5	3	1	1

Note: number of enterprises
Source: own calculation

In this case, however showing a much greater variation due to the sector. Half of service companies indicated that the strategy is formulated for a period of one to two years. In the case of manufacturing and trading companies are, respectively, three and two companies. Four commercial companies formulate strategy for the period up to one year. In the case of manufacturing and service companies are two and only one company. Such a distribution of responses suggests that commercial companies operate in the most dynamic and unpredictable environment, therefore, avoid formulating the strategy in the long term. Respondents also pointed to factors affecting the corrects of the strategy in enterprises (Table 3).

The majority of respondents indicated the “actions taken by competitors” as a factor that influences the correction of strategy. By sector, it can be seen that only in the commercial companies it was the most popular factor. In the case of manufacturing companies most respondents indicated reduction of the financial performance (trade and services at the five precepts, while in the case of service companies most respondents chosen unsatisfactory results of the implementation of the strategy (five precepts of manufacturing companies and three among the commercial.

Table 3 Factors affecting the corrects of the strategy in enterprises

FACTORS	TOTAL	PRODUCTION	TRADE	SERVICE
Unexpected changes in the market	13	5	5	3
Actions taken by competitors	21	6	9	6
Detection of errors in assumption strategy	8	4	0	4
The need to correct unrealistic goals	8	3	2	3
Internal developments taking place in the enterprise	8	2	2	4
Unsatisfactory results of the implementation strategy	16	5	3	8
Reduction of financial performance	18	8	5	5
Lack of customer satisfaction	9	3	2	4
Dissatisfaction employees	3	1	1	1
Other factors (please specify)	2	0	2	0

Note: number of enterprises
Source: own calculation

An interesting situation can be observed in the case of detecting errors in the assumptions of the strategy. Only respondents among trading companies did not indicate that factor, among other groups, 40% of respondents pointed to this item. You can find here the analogy to the results for the "period of the strategy formulation" (Table 2). Some of the trade companies formulating strategies for a very short period of time do not have time to detect errors in the assumptions.

Mostly production companies use a wide range of management tools available (Table 4). Manufacturing companies are characterized by a very complicated process, high technical sophistication, the need to appropriate management both in terms of efficiency and quality, and the use of logistics systems.

Table 4 Popularity of management tools

TOOLS	TOTAL	PRODUCTION	TRADE	SERVICE
SWOT	21	8	6	7
BCG Matrix	10	4	4	2
PEST Analysis	1	1	0	0
General Electric / McKinsey Matrix	1	0	1	0
Ansoff's Strategy Model	2	1	1	0
Balanced Scorecard	7	2	2	3
Porter's 5 forces .	12	6	4	2
Outsourcing	16	6	3	7
Benchmarking	11	5	2	4
Reengineering	1	1	0	0
Standardized management systems	22	8	6	8
Break-even analysis	13	5	5	3
Preparation of business plans	15	4	3	8
Analysis of the attractiveness of the sector	3	3	0	0
Other (please specify)	0	0	0	0

Note: number of enterprises
Source: own calculation

In total, manufacturing companies indicated fifty-four times the individual tools, service companies forty-four while trade companies thirty-seven. The most common tools are: SWOT analysis (eight indications by manufacturing companies, six indications by trade companies and seven by the service companies) and the use of standardized management systems (eight indications by manufacturing companies and six by service and trade). These tools are most frequently used by all surveyed companies. Their popularity may be effect of the ease of use and good effects (SWOT analysis) and the desire to improve services offered by the companies and to improve the company's image on the market (standardized management systems).

In terms of strategic actions there are noticeable slight differences among the various groups. Both in the case of what factors are taken into consideration in formulating strategies and for what period of time the strategy is formulated. The analysis also showed differences among these factors affecting the corrections of the strategy. In the case of utilization of management tools responses are quite similar.

5. Resources analysis

The methodology used to describe the resources of the surveyed enterprises is slight different than the one used to describe strategies. The questionnaire in the area of resource centered around two elements. The first one was a description of the characteristics of resources, the second one, tools used to improve resource's flexibility.

The characteristics of the resource consist of ranking the importance of individual characteristics based on the Likert scale from least to most important. Similarly, in the case of tools. The characteristics of the resources and the tools divided into human resources, financial resources, material resources and different resources (Table 5).

Table 5 Characteristics of resources and tools

	CHARACTERISTIC	TOOL
HUMAN	The level of internal rotation of employees	Contract work
	The use of flexible forms of employment	commissioned agreement
	The level of employee motivation	Futures
	Education and knowledge of workers	Telework
	Emplyee skills	Staff Leasing
	Experience of employees	Work on call
	The level of employee satisfaction with their work	Education in educational entities
	Professional development opportunities for workers in the enterprise	internal training
		external training
		Self-study
		Employees internships
		Rotation on positions
		Replacement planning
		Team work
		Working in teams for creative problem solving
		Expanding the content of the job
		Making new features without promotion (for example, the coordinator , mentor)
		Coaching
		Mentoring
TANGIBLE	The versatility of machines and equipment	Purchases of universal machinery and equipment
	The functionality of office space	Applying the principles of TPM (ensuring the availability of critical equipment and the desire to achieve a level of three zeros: zero accidents at work, no gaps, no failure)
	Modern hardware	Lean manufacturing
	Commodity storage capacity	The use of the rental/lease of tangible resources
	Specialist equipment	The use of borrowed material resources
	Adequacy of localization	Possibility of improving the system (eg. software update)
	The availability of transport services	Having an excess of resources in relation to the current needs
	Up to date software	Designing functional office
	Availability of expanding organization's head office	The use of free software
	The availability of housing for rent	The current renewal of hardware and software
		The use of external storage space
		Flexible supply chains of products
		Inventory reduction tools (eg . Just -in-time)
FINANCIAL	Availability of own sources of funding	Using the equity
	The availability of external financing	The issue of short-term securities
	The balance between the resources allocated to investments and retained funds (financial surplus)	Sale of redundant assets
	The ability to liquidate assets	Sales of unnecessary intangible assets (eg. Copyrights, patents)
	The ability to liquidate intangible assets (eg. Patents)	Factoring (debt collection by an external institution)
	The level of commitments with suppliers	operating leases
	The balance of receivables	financial leasing
	The value of cash on hand	Borrowing investment credits
		Borrowing operating credits
		External funding (for example, by the EU)
		long-term investments
		short-term investments
		Control inventory levels
		Control of state obligations to suppliers
		State control of receivables from customers
OTHER	Expressive organizational culture	Procedures for rewarding creativity of employees
	Immutability of mission and vision of the organization	Shaping an effective organizational structure and counteracting inertia
	Positive image of the employer	The use of computer systems supporting management process
	The organizational structure gives leeway to employees	Participation in online databases (eg portals for companies in a particular industry)
	The efficiency of the management information processes, enabling the identification of risks and opportunities arising from the environment	Tools in the field of shaping the image of the employer in the labor market (employer branding)
	Availability of Supplies	Managing the organizational culture
	Existing relationships with other organizations	Stimulate knowledge sharing and organizational learning
	Reputation of the company in the market	Taking action in the field of CSR (Corporate Social Responsibility)
	Possibility of commercialization of intangible assets owned by the company (copyrights, patents, etc.)	Taking action in the field of CRM (customer relationship management)
	The state of organizational learning processes	Promoting behaviors and attitudes oriented on flexible way of working
		Preventing excess of formalization
		The use of internal and external consulting
		The use of external sources of information (business intelligence)
		Evaluation and selection of suppliers in order to ensure the safety of the organization
		Liaise with competing companies
		Sale of patents and copyrights

Source: own construction

Then was calculated the sum of the average for each pulled characteristics and tools. This made it possible to receive a synthetic indicator which allows comparisons between elements. For traders indicators are as follows (Table 6).

Table 6 Resources characteristics in trade companies

	TRADE		
	MINIMUM	**MAXIMUM**	**RATIO**
Human resources characteristics importance	0,375	3,25	8,666667
Other resources Characteristics importance	0,7	3,4	4,857143
Tangible resources Characteristics importance	1,1	3,2	2,909091
Financial resources Characteristics importance	2,142857	3	1,4

Source: own calculation

Evidently, by far the most important characteristics for this type of companies are human resources. In relation to financial resources it is a difference of more than six times . Other resources focusing on a group of intangible resources plays as well an important role. Much less is the importance of financial and material resources. Trade is largely based on building good relations with customers, customer support and the use of available opportunities; it could explain the very high score of these groups. Material and financial resources, in this case play a much smaller role. Utilization of tools shows some differences (Table 7).

Table 7 Tools utilization in trade companies

	TRADE		
	MINIMUM	**MAXIMUM**	**RATIO**
Other resources tools	1,0625	3,1875	3
Financial resources tools	3,533333	2,533333	0,716981
Tangible resources tools	3	2,076923	0,692308
Human resources tools	3,368421	2,052632	0,609375

Source: own calculation

Clearly dominated by the use of tools, to support other enterprise resources. They have both the highest maximum rate and lowest minimum rate. These results show that in the case of trade companies other resourced might be considered as the most important resources. They shape the use of the various tools, and of how and taking into account what the company will develop. It is widely understood relationships will be determinant of behavior, and

whether the company has reached the expected growth. Relatively similar shape indicators of service companies, however, are also some important differences (Table 8).

Table 8 Resources characteristics in service companies

	SERVICE		
	MINIMUM	**MAXIMUM**	**RATIO**
Human resources characteristics	0,375	2,875	7,666667
Other resources Characteristics	0,5	2,5	5
Financial resources Characteristics	2	3,25	1,625
Tangible resources Characteristics	2,6	2	0,769231

Source: own calculation

Both here and in the trading companies' human resource characteristics of the respondents are the most important. However, in service companies is almost tenfold advantage in relation to the least significant material resources. While nominally the result is lower than in the trading companies in a percent's this resources plays an even greater role. In second place again, there are other resources with the higher score in relation to commercial companies. Financial and material resources are by far the least important in this type of business. There are major differences in the rates for the use of particular tools (Table 9). In the case of commercial companies, again in the first place are the tools associated with other resources but there are important differences in the results.

Table 9 Tools utilization in service companies

	SERVICE		
	MINIMUM	**MAXIMUM**	**RATIO**
Other resources tools	2,4	2,1875	0,911458
Human resources tools	3,421053	1,684211	0,492308
Financial resources tools	4,4	1,666667	0,378788
Tangible resources tools	3,076923	1,153846	0,375

Source: own calculation

Advantage of other resources tools is 0.3 point in this case and 2.4 point in trading companies. In services companies human resources tools are at second position and has slight advantage over financial and tangible resources. Analysis indicates that in services companies the most important type of resources is human resources. According to responders this type is very significant and quite often used.

Manufacturing companies differ in nature from the other two types. Analysis of the strategy and resource indicators shows a different perception of management. Analysis of the characteristics of resources did not shown one dominant resource type (Table 10). As in other

cases, other resources and human resources and are located on the top of the rankings, but the difference between the financial and human resources are just 2,96point. This is twice less than in the case of commercial companies and three times less than in the case of service companies. The importance of tangible resources has been pointed out here much higher than in other cases.

Table 10 Resources characteristics in manufacturing companies

	MANUFACTURING		
	MINIMUM	**MAXIMUM**	**RATIO**
Other resources characteristics	0,6	3,3	5,5
Human resources characteristics	0,75	3,75	5
Tangible resources characteristics	0,7	3	4,285714
Financial resources characteristics	1,75	3,25	1,857143

Source: own calculation

Indicators on the use of the tools also differ from what is shown by the analysis of other types of companies. Tangible resources tools are most commonly used among manufacturing companies. These indications are twice higher than in trading companies and nearly five times than in the service (Table 11).

Table 11 Tools utilization in manufacturing companies

	MANUFACTURING		
	MINIMUM	**MAXIMUM**	**RATIO**
Tangible resources tools	2,076923	2,769231	1,333333
Other resources tools	2,125	2,4375	1,147059
Financial resources tools	3,2	2,466667	0,770833
Human resources tools	3,631579	1,789474	0,492754

Source: own calculation

Such a result is certainly not surprising. That type of company are much more associated with material resources than intangible and therefore tangible resources may be considered in the case of manufacturing enterprises as their key resource.

6. Conclusion

The present study shows the differences between the various types of businesses, both in the development of the strategy and in the perception of the use of resources and tools to increase their flexibility. Depending on the different types of resources and tools results vary

greatly, but it possible to identify key resources. Appropriate use of resources greatly increases the chances of achieving satisfactory results. Strategy cannot be built without relying on the identification of key resources.

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16. Supreme Audit Institutions and New Aspects for Public Value Creation in Complex Adaptive Systems

Sándor Nagy

My idea synthesizes three seemingly distant key areas: value creation, complexity and Supreme Audit Institutions. These external audit institutions must face increasing pressure – owing to the financial-economic and sovereign debt crises – to contribute to a healthier and more effective functioning of the public accountability system and to generate higher social impacts by their activities. In order to meet these legitimate and justified expectations their value creation processes should be reconsidered and adjusted to the new recognitions about the complex adaptive systems. In my article I elaborate some proposals which are based on the complex systems theory.

Keywords: Supreme Audit Institutions, value, public value creation, complexity, complexity leadership theory

1. Introduction

Supreme Audit Institutions (SAIs) are one of the most important elements in the accountability system, they are on the highest level in the framework of checks and balances mechanisms. Their reports, remarks, opinions and proposals about the state budget and the functioning of public finance management are submitted to the legislature foremost. Their independent status and auditing mandates – based on constitutional and legal guarantees – allow their functions to evolve and can contribute to the general public welfare. Their work and communication activities to wider public community can induce higher public confidence, increasing efficiency, effectiveness and transparency of public finance management, the development of accountability system, and the reduction of corruption and rent-seeking behaviour by delivering objective, impartial, relevant, timely information and reports which rely on evidences, knowledge and best practices in accordance with professional standards and criteria predetermined (Kovács 2010, Báger 2013).

Their activities are carried out subject to international norms and standards (e.g. INTOSAI's ISSAI or IFAC – The International Federation of Accountants). The most determinative organization affecting the SAIs' operation is the INTOSAI (International Organization of Supreme Audit Institution). It embraces the community of external state auditors and provides a politically independent platform in order to create and transmit knowledge (explicit and tacit) and share best practices among its members (192 full member)

to respond challenges and common interest.

Owing to the financial and economic crisis and other turbulences in the public sector the activities of the Supreme Audit Institutions have been more appreciated and reevaluated (Nagy 2012). The importance and enhancement of their usefulness or value-creating capabilities have been placed into the focus area of social expectations, so the examination and understanding of this special (relatively neglected) research field are reasonable, justified and promising. My research orientation basically concentrates on the ways and means by which the external auditors' impact on the public accountability system, on the communities and on the wider society could be increased considering the fact that their operating environment bears the marks of complexity. In this article I try to find answers *how* and *in which form* the different kinds of complexity management and leadership techniques and methods – both organizational and managerial aspects have been emerged and evolved in the knowledge-based competitive sector – can be interpreted and inserted into the value creation processes of a particular SAI.

The term „complexity" can be linked to the operation, the behaviour and the structure of the complex systems, which – otherwise – can be derived from the complex systems theory (Mitchel – Newman 2002). The complex systems theory is a scientific framework which tries to reveal and explain how the simple rules and driving forces induce macro- or organizational level emergence, how could the adaptive pressure generate self-organization and system dynamics. The complexity does not mean the same thing as the expression „complicated". A space shuttle for example is a complicated machine, but the complexity cannot be derived from its structure and design. The adjective „complex" refers to such set of properties which unambiguously define complex systems. The new approach creates new opportunities and opens new research directions for several scientific disciplines including the social sciences and the business administration as well. Building on these pillars I want to place the theory into the context of state auditing (Kaisler – Madey 2009).

In the first part of my short, recapitulative paper I give a short description about the "value" and Moore's "public value" concept followed by the public value creation chain of Supreme Audit Institutions. After the discussion of the complexity management and leadership techniques used in the competitive sector, I examine the possible utilizations of this new paradigm for the external auditors. Finally, on the basis of extensive literature review I formulate some proposals to SAIs how to be more responsive, creative and innovative and how to generate more impact in the society and the in the public finance system.

The novelty of my paper is the integration of results and ideas from the complex

systems theory to public value creation of a Supreme Audit Institution and the recommendations targeting certain characteristics of SAIs derived from the new approach.

2. The „value" and the „public value"

By studying complex systems we can observe numerous notions whose clear and precise definition is almost impossible. Can we exactly define the beauty or goodness? From the observer's perspective maybe yes, but a generalized definition does not exist at all, which would be accepted by all individuals or observers. It is the same situation if we focus on „value" and „valuable". In capitalist societies we have to face high pressure on agents (entrepreneurs, companies, the state, employees etc.) to create value in economic sense. Companies have dual value creation which means that in parallel they generate shareholder value (increasing profit) and customer value (increasing total utility) (Chikán 2008, Illés 2008). In the long term they can only exist in a complementary way. If we look closer the different concepts of value they have in common that each can be connected basically to the utility (Ueda et al. 2009). Nowadays the determination of value covers more and more perceptual dimensions (IFAC 2013) and the "extension" of utility towards the society or the natural environment can also be observed. When interpreting it in the public sector the logic of the public value creation seems to be expedient. The following subsections give a more detailed insight into this topic.

2.1. What is value?

In the course of history several approaches have been emerged to describe and understand the concept of „value". The determination of the notion can be traced back to the ideological frameworks of the given historical context. The subjective and objective perceptions and the conflicting preferences of individuals and the society about the „value" and „valuable" have appeared in the academic debate as well. The discipline of axiology tries to catch the essence of it: the Greek word („axios'' – worthy, valuable – and "logos'' – discourse, reasoning – refer to the methods and ways the value was analyzed and interpreted. The most relevant domains are the following: ethical, philosophical, psychological, economical, technological and environmental (Ueda et al. 2009). Because of its embeddedness into the multidisciplinary space the interpretation and the logical concept of „value" become more and more complicated and compound. By now, already in the

competitive sector the value creation is more than merely the contribution to shareholders' profit or the utility provided by the product or service for consumers. For instance the CSR activities of companies or the implementation of "greenwashing" strategies also became the part of their value creation processes. The current and forward-looking challenges and questions of sustainable development and value creation seem to be a problem of decision-making and series of choices in the society constrained by limited resources both in the private and public sector. Consequently an integrated and synthetic approach would be necessary in the field of value creation (Ueda et al. 2009, IFAC 2013). The concept of public value creation is also based on this logic.

2.2. Moore's public value concept

Moore's idea – elaborated at the Harvard University – is focusing on the strategic dimensions of decision-making of public managers in order to maximize their institution's contribution to the social well-being – in other words the concept pays attention to the relevant public value creation processes. The three interacting cornerstones are the following: (1) authorizing environment, (2) public value outcomes and performance, (3) organizational capacities. Dealing with the latter, I want to focus on management and leadership challenges and capacities supplemented by the issue of organizational innovation (Moore 1995). The effective accountability relations (public financial accountability) should hiding in the background to balance the three vertices.

(1) Authorizing environment (authorizing environment, legitimacy, enabling environment and support): the mandates, authorizations and the public functions are highly associated with the delegation of public money and public resources, this requires reporting obligations. Output legitimacy occurs, if the value created and the organizational performance acceptably increases (related to predetermined parameters) the welfare of the society. In such cases the public entity's raison d'etre substantiated (Sanchez-Barrueco 2014).

(2) Public value outcomes and performance: at this point specific strategic goals, values and their desired long-term effects – which the community consider important – must be clarified and defined; which in the given context and condition of a wider system can adapt to the particular situation. Here, it is needed to develop appropriate performance measurement tools and methods, as well as to support the continuous learning opportunities and processes.

(3) Organizational resources, capacities and capabilities: thereby the desired public value creation can be realized. This could include managerial skills, leadership approaches

and the complexity (non-linear) thinking.

The public value creation is much more, than producing public goods or providing public services. It is about the decision-making conditions and procedures of public managers, and the pubic institution's social impact. To understand the difference let's see an example. The residential waste and recycling service is a public service which could induce individual benefits (private value) for the residents, but it also deliver useful outcomes for the citizenry as well: improvement of hygienic conditions, public health protection, neat and clean townscape, comfortable livable environment, green issues, sustainability and recycling. These are already the categories of public value (O'Flynn 2007). The notion and the purpose of the public value creation can be transposed to the functioning of Supreme Audit Institutions as well (Talbot – Wiggan 2010). In order to gain insight into the (public) value creation processes of a SAI in the next chapter I demonstrate a generalized framework which includes the most relevant elements, and depicts the structure and logic of value creation.

3. The general framework for public value creation at Supreme Audit Institutions

The importance of public value creation has been also recognized by the INTOSAI as well and it laid down its basic principles in ISSAI 12 standard in 2013. (ISSAI 12: The value and benefits of Supreme Audit Institutions – making a difference to the lives of citizens. This standard essentially covers the quiddity of public value concept.)

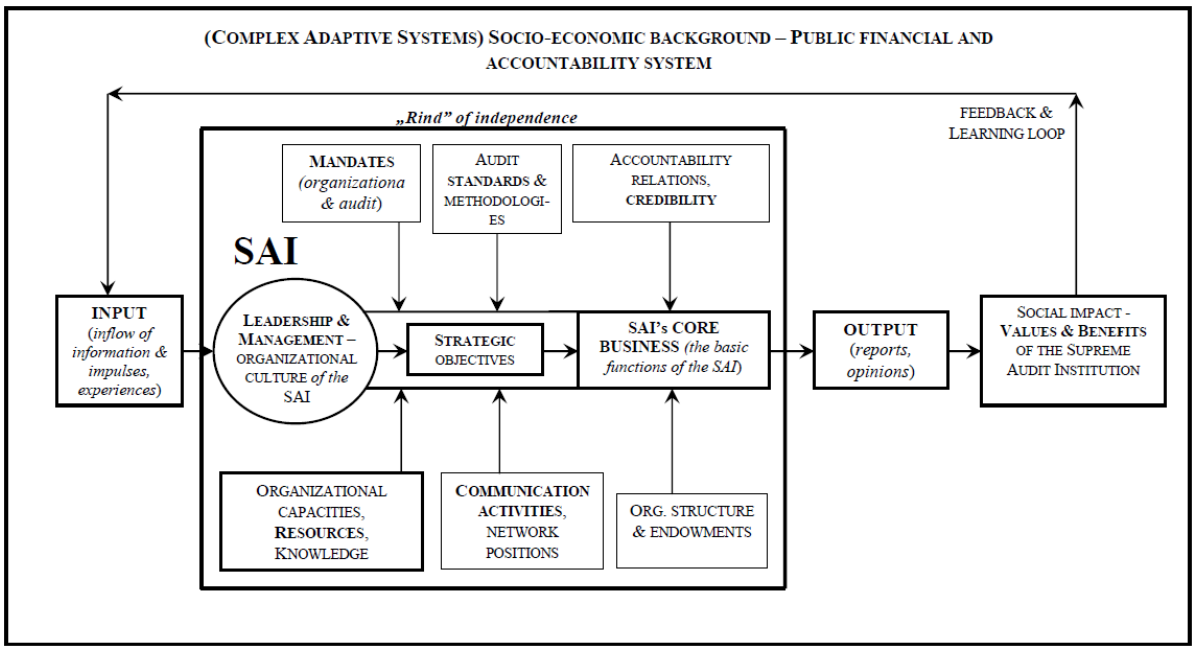
Observing the deeper content and the idea of the INTOSAI we can state that the elements of Moore's framework turn up here also: (1st group of principles) strengthening the accountability, transparency and integrity of government and public sector entities, (2nd group of principles) demonstrating ongoing relevance to citizens, Parliament and other stakeholders, (3rd group of principles) being a model organization through leading by example.

Following Porter's (1985) train of thought Figure 1. depicts the primary and support activities and factors affecting the public value generation at the SAIs.

The main direction or path of value creation is illustrated by the horizontal axis ranging from inputs towards the social impact. The primary activity of the institution is the auditing – here: the core business of the SAI – which is supported by other no less important determinants and elements (e.g. internal and external communication, management of network positions and relations in the system of accountability, the credibility as a special factor in the public sector with a high relevance). The management, the leadership and the organizational culture enjoy a high priority, as well as the strategic objectives, which are

formed in response to the external environmental changes. As a result of the redefining the strategic objectives the elements, the composition of value creation could be subject to change.

Figure 1 The generalized public value creation chain of a Supreme Audit Institution



Source: own construction and synthesis based on Azuma (2004), INTOSAI IDI (2012), Moore (2007), Porter (1985), Talbot − Wiggan (2010)

Audit mandates refer to several types of audit which can be conducted: (1) regularity (including financial or financial statements) audit, (2) comprehensive audit focusing on „good management" issues, (3) performance or value-for-money audits in which economy, effectiveness and efficiency aspects are analyzed. In (4) follow-up audits SAIs monitor and observe the utilization of previous suggestions and comments, basically made at performance audits (ÁSZ 2008, ISSAI 3000).

The SAIs carry out their work covereth in independence, but no means isolated. If we take a look at the value creation chain then both at the input- and the output/impact-side attributes of the complexity can be perceived. The input side contains the following: needs and expectations (impulses) in the systems of society or the public finance; detection and knowing the complex or wicked problems (Ritchey 2013); collection of information and evidences in sufficient quality; mapping and understand the behavioral patterns, positive and negative externalities generated by the redistribution of public resources. The achievement of long-term effects of auditor's work and the application, utilization of reports, findings, and recommendations can be interpreted as the social impact side. Of course other parts of the

support activities and determinants – not described here in detail – play a vital role.

Our World, the environment around us consists of interconnected nested systems and the networks or patterns of the connections among agents and other system components bear the marks of complexity. The academic research of these areas has been intensified in the last two decades and penetrated into several scientific disciplines (e.g. life science, physical science, social science, formal science) (Barabási 2010, Beinhocker 2007, Csermely 2005, Kornai 1971, Vas – Bajmócy 2012). In connection with the business administration (as part of the social science) the message of the researchers are unequivocal: the characteristics of complexity should be taken into consideration, however at the same time there is a strong and substantiated need and recognition to adapt to this new approach either on organizational level or regarding the managerial decisions.

In the next chapter I demonstrate the most important and relevant properties of the complex adaptive systems and I try to reconsider the operating environment of a SAI in the light of complexity.

4. Complexity and the Supreme Audit Institutions

In recent years the concept of public value greatly appreciated due to the extreme, turbulent changes, structural transformations perceived at global and local levels (e.g. effects of climate change, rearrangements in the network of the society, issues of sustainable development, phenomena of corruption, financial and economic crisis, management difficulties regarding the public debt). The new conditions draw up new questions and challenges for governments, for decision-making, public managers and the audit institutions as well (Báger 2008, Kis 2014, Kovács 2010).

During this period significantly strengthened the vision of „more output/outcome from less resources" and this was supplemented with the increasing need for a more efficiently running control/accountability system. In such cases the performance, the public value creation ability and the „3E" criteria of the public sector come into the spotlight (Benington – Moore 2011, Benington 2012). Considerations about complex systems offer an alternative perspective, which describes the spheres and systems nested in each other.

The events, occurrences and emerging patterns of the last period confirmed and even more justified that the operational environment of a Supreme Audit Institution should be described as a complex adaptive system (CAS).

4.1. Complex adaptive systems in brief

Kaisler and Madey define the complex adaptive systems as follows: "*...they* e*xhibit behaviors arising from non-linear spatio-temporal interactions among a large number of components and subsystems*" (Kaisler – Madey 2009, p. 5). This short description tries to capture the essence of such systems, but it does not give the whole picture.

Those systems are considered complex and adaptive which can be described with the following properties (Boisot – McKelvey 2011, Dinya 2008, Kaisler – Madey 2009):

- large number of heterogeneous agents or elements arranged in structures
- these agents interact locally and are connected with each other directly or even indirectly
- there are basic/simple rules inducing, enforcing self-organization and system (non-linear) dynamics (the system changes over time)
- non-linearity: slight changes in the initial conditions of the system status induce: (1) large, (2) small changes or (3) do not cause any change at macro level
- feedback mechanisms in the system facilitate the adaptation
- emergent features and patterns on macro level owing to the system dynamics
- far-from-equilibrium state
- interdependencies and optimal adaptation at the edge of chaos in response to environmental changes

The complex adaptive systems (e.g. biological, ecological, social, economic) show the same characteristics, thus the understanding, the adaptation and the interventions can take place on the basis of analogies.

In respect of the public value creation chain of a SAI and in favour of the efficient maximization of auditing impact the above mentioned characteristics should be taken into consideration and the SAI should be adaptive in the light of the identification of complexity. For SAIs it is indispensable to build novel capacities such as the creativity, responsiveness, learning, innovation capabilities, activation of unconventional resources to generate high level operational value added. The deterministic environment, the extensive and far-reaching „catchment basin" of a Supreme Audit Institution concerning information flow and incoming stimuli, assuming to be simple, predictable and easily cognizable would be thoughtlessness.

4.2. Complex operating environment of the Supreme Audit Institution

The socio-economic problems and the public finance disturbances emerging in a constantly changing, complex adaptive systems and they should be alleviated and solved in line with the rules and conditions of the non-linear "game". The development of new approaches, techniques and strategic frameworks which able to manage the complexity can be also expected deservedly from governments too (Cairney 2012, CIPFA 2013, Dolphin – Nash 2012, Duit – Galaz 2008, Duit et al. 2010, Gilpin – Murphy 2008, Jones 2011, Kovács 2014, Nooteboom – Termeer 2013, Swanson – Bhadwal 2009).

The general auditing functions and features (GAFF) of a specific SAI should be harmonized to this circumstances in order to reach greater responsiveness, more refined interpretative skills and more powerful impact (van der Knaap 2011). Placing logically the organization in question in a complex system is not a new thought, one of the first initiation could be linked to Pat Barrett – the former Auditor General of the Australian National Audit Office, ANAO. In his publication he has explicitly emphasized the importance of the organizational adaptation and the challenges of value creation (Barrett 2000). It is clear from his reasoning that the ANAO could only be relevant and generate "fresh" impressions gratifying public interest, if it would be recognized that the organization works in knowledge-based industry and with the help of the re-calibrated management higher performance could be realized. In the light of the foregoing findings he considers the following factors particularly important:

- the importance of creativity, the acquisition of knowledge, adoption of new technologies
- building up knowledge networks and effective operation
- branding and demonstrating the value and benefits of SAIs
- knowing the needs of the society
- creating changes and influence social norms
- tutorial and facilitator functions
- considering sustainable development aspects and long-term effects
- being professional, top organization

In certain areas of the competitive sector (knowledge-based services, creative industry, IT-sector) several organizations formed which have been developed such techniques and solutions by which the management of the complexity can be successfully implemented. So far these new ideas and methods have been only marginally penetrated into the public sector

and in case of Supreme Audit Institutions it has not yet been completely and systematically developed. The next section deals with the discussion of the theoretical aspects of the complexity management to provide a starting point for adoption regarding the public value creation of SAIs.

5. The management of complexity

In the private sector some exemplary companies can be found which are able to manage the complexity successfully, their organizational structures and leadership styles are subordinated to this new paradigm. Some of them – which accomplish and realize it at a professional level – serve as good examples even for the public sector: inter alia CNN, Google, PIXAR Animation Studios, Prezi. In their value creation chain numerous special elements can be observed. The different concepts of value creation in the private and public sector are evident, although the addressing the issue of complexity can be the point of intersection.

In order to manage the complexity sufficiently, the only way for a proper response if we increase our organization's complexity as well. Blending of the complexity and organizational theory is not a newfangled idea. Such companies can be better, more efficient and prosperous than a traditional/mechanical/bureaucratic one (Allen 1988, Burns – Stalker 1961, Brown – Eisenhardt 1997, Morgan 1997 in Levy 2000).

Enterprises operating in knowledge-based, information economy – producing non-traditional industrial products – can be labeled as „new generation" organizations. Similar to the complex adaptive systems within organizations, collaborative networks and interest groups informal, dynamic – in many cases overlapping and/or spontaneously organized – interactions emerge which could subserve the creative problem solving, the learning and the intelligent adaptation. I believe that the relevance of creativity and the innovation, innovative attitudes is important at traditional firms, but here in overwhelming majority the „old-fashioned" specifications bulges out (top-down control, linear thinking, hierarchical structure, predictability, need for simplification and stability).

In case of new generation companies we can meet sub- and super-ordination too (formal relations), but fundamentally there is great emphasis on bottom-up dynamics and informal, ad-hoc, horizontally structured clusters that accompanied with the free flow of information. We can find the complexity, the self-organization, the instability and the adaptive tension (the term was created by McKelvey 2001), which stimulates the rapid innovation that drives the

company forward (Bettis – Hitt 1995, Cawsey et al. 2012, Eisenhardt – Piezunka 2011, Houchin – MacLean 2005, Schneider – Somer 2006). The changes in external environment treated not as threats rather new possibilities for higher value creation. It is obvious that the leadership style should be also adjusted for exploitation the benefits stem from the complexity (Bennet – Bennet 2008, Hazy 2008, Surie – Hazy 2006).

5.1. The complexity leadership theory

The previous criticisms partly answered Uhl-Bien et al. developed the complexity leadership theory (CLT) (Hunt 1999; Osborn et al. 2002 quoted in Uhl-Bien et al. 2007). The CLT-model distinguishes 3 leadership roles: (1) administrative, (2) enabling and (3) adaptive leadership, which complement each other at the same time. The concept creates a link between the traditional organizational leadership functions and the emergent informal processes of complexity.

(1) administrative leadership: such activities which can be predictable, easily coordinated/synchronized, their outcomes can be efficiently and effectively kept under control. This includes bureaucratic functions.

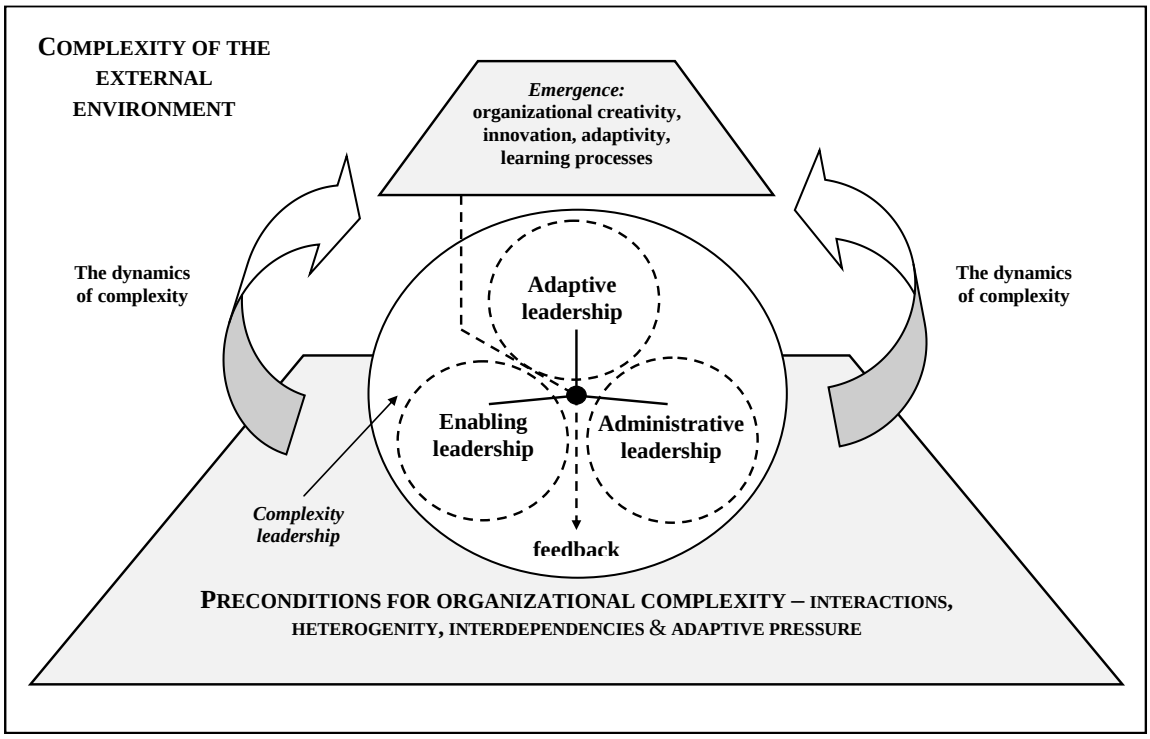
(2) enabling leadership: the basic task here is to provide suitable conditions in order to promote the development of adaptive leadership and the implementation, realization of its results, furthermore it helps the interlacement of administrative and adaptive leadership by handling the adaptive tension.

(3) Adaptive leadership: the authors define it as follows:*„…adaptive leadership is an emergent, interactive dynamic that produces adaptive outcomes in a social system...it originates in struggles among agents and groups over conflicting needs, ideas, or preferences; it results in movements, alliances of people, ideas, or technologies, and cooperative efforts...proximal source of change in an organization”* (Uhl-Bien et al. 2007, p. 306).

It clearly implies that novel, creative ideas, entirely new knowledge or capacities emerge on organizational level and even the quality and speed of learning processes will be favorable influenced. The essence of the concept is summarized in Figure 2.

Based on the apparent similarities and parallels can be stated that the management of the complexity, the means of managerial/regulatory responses can be integrated into the logic of public finances.

Figure 2 The logic of complexity leadership theory and the emergence of organizational creativity, adaptability, innovation and learning.



Source: own construction based on Uhl-Bien et al. (2007)

6. The utilization of complexity leadership theory at SAIs and practical recommendations

The analysis of the issues regarding the efficiency aspects of public policies, providing credible information, formulating opinions about long-term effects of budgetary decisions, the monitoring of the dimensions of sustainable development – including fiscal sustainability –, the accountability of public managers, restraint or balancing of the enforcement possibilities of governmental self-interest, identification of the negative emergent patterns and barriers to public welfare increasingly come into the scope of SAIs. We can consider the Supreme Audit Institutions – knowing their general challenges and complex operational environment – as new generation organizations wherein the new possibilities and paradigm of public value creation can be identified.

The theoretical considerations presented in previous chapters – in my view – are adaptable to this special organization too. The innovation, the creativity, the emergence of new knowledge, the responsiveness of auditing mostly come into the forefront in the field of performance auditing (particularly at problem-oriented performance audits) (Lonsdale et al. 2011; van der Knaap 2011). This is almost the only area where the ISSAI standards allow the

SAIs to form the concept of auditing freely without strict, prescriptive rules (ISSAI 3000). However the audits conducted on regulatory/control- and management systems, the risk analysis and the advisory activities could be also promising fields. Nevertheless it could cause problems that projects analyzed merely audited from the aspects of economy and effectiveness, but the issues of efficiency and the effects on sustainable development are neglected in many case or explained obscurely especially in the input-impact relation. Moreover, the value added of performance audits is difficult to measure and not standardized/unified (van Loocke – Put 2011).

SAIs are committed to their own value-creation and performance, in the course of functioning, they intend to maximize positive effects and impacts (ÁSZ 2013, INTOSAI 2010b, Reed 2013, Talbot – Wiggan 2010). Nowadays we can already find several independent external audit institutions (e.g. National Audit Office UK, Algemene Rekenkamer NL) where some modernization process have started, and they are already at a stage of change and alteration, where certain attributes and features of „new generation" firms can be noticed and identified (operation on the basis of extensive and well-managed knowledge base, high level of flexibility and adaptability, innovation, creativity and the signs of complexity management). The strategic goals and vision of INTOSAI about the value creation confirm/fortify these efforts and initiatives (ISSAI 12). However obstructive factors of change will emerge for sure:

- lack of (basic) resources and capacities (SAIs found mainly in Africa and other developing countries)
- professional disagreements, respect for traditions
- lack of innovative attitudes

Below – relying on earlier thoughts – I enumerate former initiatives and findings, and I formulate novel proposals refer to such characteristics of a new generation SAI by which they could understand, interpret, manage and exploit the complexity. This follows the logic of Moore's strategic triangle. The ideas outlined are initiatives for general application and only call attention to the importance of change.

But I must emphasize, that the suggestions must be formed, clarified and tailored in the light of the working conditions, the general features and possibilities of a given audit institution.

I. Value creation and the organizational performance measurement:

(1) At the SAIs the concept of „public value creation line/chain" should be introduced,

focusing on management and monitoring activities relating the complexity. In order to make the SAIs' performance measurement framework (PMF) more effectiveness, relevant and objective the components of the value creation line should be extended and analyzed/checked on value-for-money auditing level too.

(2) Strenghtening the independence of Supreme Audit Institutions (de jure & de facto). In fact, the most important foundation for the value creation is the independence (organizational, legal, operational, financial independence).

(3) Boosting and integrating the concept of value- and performance oriented behaviour and mindset in the SAIs' everyday work and performance auditing.

(4) The elaboration of new methods and measures considering/reflecting complexity and non-linear processes in order to demonstrate, increase, measure and follow-up the impact (value-added of SAI's work, contribution to public welfare) of the Court.

(5) Increasing peer review activities to promote organizational credibility. In the peer review other SAIs try to reveal shortcomings, risks of operation and form a comprehensive opinion about the examined auditor (ISSAI 5600).

(6) In consequence of the feedback processes – typical for complex adaptive systems – the follow-up audits are even more appreciated, so greater emphasis should be placed on them.

II. Authorizing and supporting environment:

(7) Enhancement of learning processes and public finance awareness (PFA): SAIs should launch/set off learning processes, attitudes and generate needs of actors involved in public finances, civil society, younger cohort as well as provide objective, credible strong points about public finance affairs.

(8) More intense communication with stakeholders (Bringselius 2014, Dye 2009, INTOSAI 2010a) and to build capacities to absorb impulses from the operational environment (public finance system and the society). More effective interlacements with the academics would be necessary, because currently the research of the Supreme Audit Institutions limited and not so popular due to scarcity of data available. Though there are some efforts to build up databases, but they realized only some success. It is very encouraging that more and more SAIs use up-to-date communication channels (Facebook, Twitter, Youtube), moreover for example the European Court of Auditors recently will introduce its new communication strategy and spokesman.

(9) Measuring own organizational performance and release the results considering the needs of continuity and comparability.

(10) Detect and understand the imaginations of the society about value and public welfare.

III. Capacities, capabilities and the development of auditing techniques:

(11) Introduction new leadership and management techniques, especially the complexity leadership style and arrangement (particularly the adaptive and enabling style).

(12) Formation of stimulating working environment, liberation of communication within the organization, installation long-term incentives, reinterpretation of personal and organizational performance indicators.

(13) Hunting for new and non-traditional resources. In the value creation line should appear new kinds of inputs and elements such as the cooperation, commitment, knowledge, creativity, innovative skills and credibility. The trinity of value creation (independence, credibility, knowledge) has increasing significance. The measuring and improving of the elements of value creation should be treated as high priority issue.

(14) Rethinking focus points of auditing: in performance audits greater attention should turn to efficiency, sustainable development and public value creation issues. New challenge could be the detection of emergent patterns on macro level, I denote it "emergence audit". From the point of view of auditing methodology in this case the deeper, investigative/exploratory social network analysis will play more important role than the classical statistical sampling.

(15) Improving organizational and personal learning capacities: building knowledge in connection with auditing, free flow of best practices within the INTOSAI community.

(16) Selection of auditing topics: bottom-up initiatives within the SAI for the selection of value-for-money topics contrary to the recently observed top-down planning (Put-Turksema 2011).

(17) Projects with seemingly less risk and relevance should be also audited because of non-linear traits since they could induce such impacts in the society which could enjoy deeper interest or affect the accountability system. This can contribute to the restraint of harmful emergent patterns (corruption, rent-seeking behaviour etc.).

(18) Building capacities to understand complexity, the motivations for self-organization, to detect emergence and to get the big picture about the whole public finance system and its context.

The aforementioned listing could give strong points and additional ideas to serve a more efficient value creation at the Supreme Audit Institution which could contribute to the improvement of social benefits in terms of common good and welfare.

7. Summary

The management of complexity, the adaptation capabilities, boosting the innovation processes, fostering the organizational level creativity could induce long-term competitive advantages in favour of the knowledge-based, post-modern companies. My basic premise was that the concept of complexity can be integrated into the public value creation of Supreme Audit Institutions. Studying these special institutions within the frameworks of the complex systems theory I have concluded that the Supreme Audit Institutions can be considered as „new generation" knowledge-based organizations which could successfully adapt to external, complex operational environment and thereby generate higher social impact (public value). After the theoretical considerations and arguments I formulated practical recommendations which could be indispensable or necessary preconditions for a modern Supreme Audit Institution.

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