

PhD Program in Business Administration

## PhD THESIS WORK SUMMARY

# Strategic adaptation, ambidexterety, and competitiveness in Hungary between 1992 and 2010

by

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**Supervisor:** 

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**Department of Strategic Management** 

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#### 1. The choice of topic and justification of the central research question

#### **Background of the PhD research**

I've started my doctoral studies at the PhD Program in Business Administration at Corvinus University of Budapest under the supervision of Prof. Károly Balaton, in strategic management specialisation in 2005. At the same time, I have started to work at the Institute of Management under the leadership of Prof. Miklós Dobák. I have been involved in teaching various courses as well as in participating in scientific research projects led by Prof. Dobák and Prof. Balaton. Therefore it is beyond doubt that both had a significant influence on my PhD research. Both professors have inspired my continued devotion to the learning process, helped on the way of discovery, and provided early critiques on my work. Thank you for your sincere guidance and continued support in all ways.

Of course, long discussions with my colleagues at the Institute of Management also had great impact on my work. Among others (in alphabetical order) I owe acknowledgement to Ádám Angyal (general and crisis management), Gyula Bakacsi (organisational behaviour), Lilla Hortoványi (entrepreneurial managemenet), Sándor Kovács (organisation studies) and Ernő Tari (strategic alliances). In the past few years I have been involved in several major research projects, where I gained significant experience and managed to publish individually and with co-authors. The research projects with the greatest impact on my personal development were (going backwards in time):

- from 2010, 'Knowledge based economy in Hungary' TÁMOP-4.2.1.B- 09/1/KMR thematic research, research coordinator in 'Innovation in the SME sector' subproject, head of research: Prof. Károly Balaton
- from 2007, 'Effective business strategies in different corporate life cycles', OTKA thematic research, researcher: CUB Institute of Management, head of research: Prof. Miklós Dobák
- 2006-2008, 'Regional role and innovation activity of Hungarian centred and governed enterprises in order to increase competitiveness', OTKA thematic research, researcher: CUB Institute of Management, head of research: Prof. Károly Balaton
- from 2005, 'In competition with the World' research program, CUB Competitiveness Research Centre (CRC), researcher: CUB CRC, head of research: Prof. Attila Chikán
- 2004-2005, 'Corporate learning and strategy formulation at SMEs', researcher: SZE Department of Marketing and Management, head of research: Ilona Papp, PhD
- 2004 'Influencing factors in entrepreneurial activity and growth', researcher: SZE
  Department of Finance and Accounting, head of research:, Szilveszter Farkas, PhD, PTE
  Department of Business Economics and Accounting, head of research: László Szerb, PhD

Due to individual and common interest, I have had the privilege to carry out research in the framework of each and every schools of strategic management connecting the empirical results with other local and national findings:

- Design School and Planning School Szabó and Hortoványi 2005, Szabó 2005a, 2006
- Positioning School Szabó 2005b, Hortoványi and Szabó 2006b, Hortoványi et al. 2006, Szabó and Vida 2009
- Entrepreneurial School Hortoványi and Szabó 2006a and c, 2007, 2008a, Szabó et al.
  2009, Hortoványi et al. 2009, 2010
- Cognitive and Environmental School Szabó 2008
- Learning and Cultural School Hortoványi and Szabó 2006e
- Power School Balaton et al. 2010
- Configurational School Balaton et al. 2010, Szabó 2008, Hortoványi and Szabó 2006b and d, Szabó and Dobák 2009

Although my involvement as a researcher was dispersed, my interest turned gradually towards the in-depth study of Configurational School. Exploiting fortunate situation that my professional and my personal interest had met in the very same research focus, over time my enquiry became absorbed in this field. In the following I will introduce the basic ideas of the Configurational School and later on I will build my arguments on this foundation.

#### **The Configurational School**

The starting point of the school is that an organisation can be described in terms of some stable configurations of its characteristics (behaviour and strategy), which it adopts to a period of time in a particular context. If the context changes, for example due to industry growth or decline, new, different type of configurations emerge and can be regarded as stable. There is a transition process between the different stability periods, which rise the need for transformation (Miller, 1985). The patterns of the configuration transformations are more or less regular; these can easily be demonstrated with life cycle models (cf. Greiner, 1972). The task of strategic management is to maintain stability through adaptable strategic changes. The process and the content (plan, ploy, pattern, perspective, position) of the appropriate adaptation strategy depends on the environment, hence each configuration can be right depending on the context.

The Configurational School can be divided into two main areas. On the one hand it describes, that the strategies and the organisations either adapt to the environment, or they attempt to influence it. On the other hand Configurational School assesses which are the successful adaptation strategies in the transitions periods (Mintzberg et al., 2005: 328-377).

A good momentum for studying the Configurational School could be the appearance of a new product, technology or business model that could significantly alter the existing market structure or might bring new industries to life. These phenomena are worth examining on strategic level (Klepper and Graddy, 1990).

Both the international (cf. Miles and Snow, 1978, Porter, 1993) and the Hungarian (cf. Antal-Mokos and Kovács, 1998, Antal-Mokos and Tóth, 2001, Hortoványi and Szabó, 2006b) strategic researchers have been concerned about the environmental adaptation and strategic behaviour of enterprises for a long time. The researchers are examining the relations between the environment, adaptation, and configurations.

In my doctoral researches I continue this path, but I also raise new questions and hypotheses. I examine the longitudinal development of some pre-selected factors between 1992 and 2010, and afterwards, I test the relationship between these factors. The research model and the hypotheses of the PhD thesis are summarized by Figure 1.

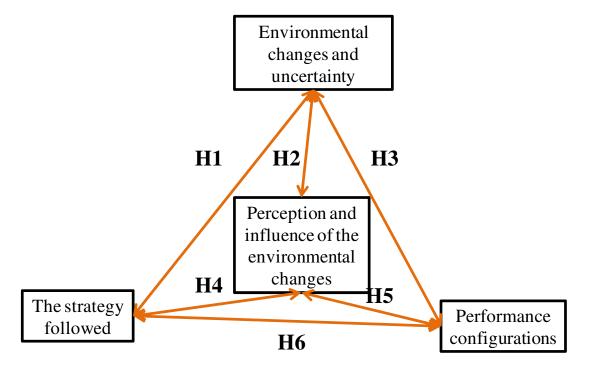


Figure 1. The research model and the hypotheses based on the Configurational School

In my earlier research (Szabó, 2008) I interpreted the possible adaptation strategies of the participants of the bio-ethanol industry in regard of the changes induced by the evolving industry itself. My researches covered the following areas: (1) Interpretation of the environmentally conscious and innovative business opportunities in the oil industry, which appear as environmental challenges, and then (2) Integration of most important categories of strategic answers given to the environmental challenges found in the literature. Finally (3) the interpretation of the adaptation strategies based on the example of the participants of the bio-ethanol industry could take place.

Summarizing the learning points of the adaptation strategies found in the bio-ethanol industry made it possible to disprove the standpoint of the contingency theory, which states that there is only one appropriate (organisational) and efficient solution to a certain environmental conditions (Dobák and Antal, 2009).

Contrary, I managed to confirm the supposition of the Configurational School, which states that more than one integral adaptation strategy, strategic archetype can be efficient and successful depending on the context and the organisation (Miller and Friesen, 1977, Miles and Snow, 1978).

Beyond that, I could also point out that all the existing adaptation strategies can be viable in certain stages of the life cycle. The justification of this hypothesis, revealed by qualitative methods, has not happened yet with quantitative tools, which I compensated in the empirical researches of the dissertation. My results justify that firms can respond to the challenges of the external environment with different but still viable strategies and configurations.

Beyond the cross sectional, same time analysis of the environmental conditions it is worth shifting to the longitudinal analyses covering more periods of time. It is an interesting question regarding that, whether the same strategy types would be dominant in different environmental conditions as well. Hungarian researchers, for example Antal-Mokos and Kovács (1998), Antal-Mokos and Tóth (2001), and Hortoványi and Szabó (2006b) has already tried to answer the question partially.

The above mentioned researchers examined nearly identical variables (in the last two cases the variables were completely identical), analyzed samples with similar composition (all of them used the current database of the Hungarian competitiveness research program) and although they used identical research frameworks, they created different (only partially overlapping) strategies. It makes the longitudinal comparison of the strategy types more difficult, which I dissolved in my dissertation and suggest a new and integrated methodology instead of the analysis of fragmented samples.

The integrated application gives an opportunity for examining whether the different strategies appear in the same ratio or not at different environmental conditions. The assumptions of Configurational school that different configurations and strategy types suit successfully the different environmental conditions was also proved by my empirical study presented in details in my dissertation.

Furthermore, my results also confirmed the assumption of Burgelman (1991), Pettigrew (1985, 1987) and Dickhout et al. (1995) that firms during crisis tend to concentrate on the strengthening their existing position and their exploitative activities, and hence, the most frequent strategy types will be retained. In contrast, under favourable conditions new strategy variations emerge and the ones with lower performance are also proven to be viable.

#### **Relevance of the research**

The research of the strategic adaptation and the configurations of the organisations are well established, although several research questions are still needed to be answered in the relations between the environment, strategy and performance: (1) Is the environment determines the strategy, and the competitiveness of the configurations? (2) How do the environmental changes influence the strategy and the performance of the organisation? and (3) Can the configuration of an organisation influence its environment? Based on that literature review the question may rises in the reader whether is it possible to discover new element by examining this phenomenon any further? Is it still timely to develop the field? I believe that the answer is yes for both questions mainly because it is time to change:

- from static to dynamic approaches,
- from short term focus to longitudinal researches with extreme environmental situations,
- from the examination of bi-variant relations of firm characteristics in order to understand the complex configurations as a whole phenomenon,
- from US base researches to the research of emerging markets (like Hungary),
- from simple description of firm behaviour to theory development by hypotheses development and testing,
- from replicatory studies and principle component analysis to up-to-date research design and methodology (like multidimensional scaling).

Summarising it, in my dissertation I make an attempt to study thoroughly the strategic adaptation of the Hungarian companies between 1992 and 2010 with an up-to-date multivariate research design with the aim of providing answers to the above mentioned research questions. In particular, I examine the following elements in detail:

- the environmental changes and the sources of environmental uncertainty,
- the perception of environmental changes and the capability to influence the environment,
- the deliberative strategies followed by the organisations,
- the performance of the organisations compare to their main competitors, and from that the latent performance dimensions and configurations, and
- the relations between the above mentioned variables, hypotheses.

#### 2. Research design

#### **Development of the research framework**

The identification and description of the strategic adaptation archetypes and the clarification of its relation to the environment are the focus of the empirical research. I plan to identify and describe the archetypes of the adaptation strategies by using the methodology of the configuration school which was presented in the first part of the dissertation. This fits into the literature of strategic management, where configuration is described by researchers (follow the path of the game), while the transformation is mainly practiced by managers and described by consultants (set a trap) (Mintzberg et al., 1998).

Researchers are divided on the question of the classification of variables. The first stream is constituted by 'splitters', who take very small, highly differentiated units, use continuous measurement scales, and then correlate pairs of variables. According to them, sub-samples are significantly different in key ways which justifies the separation of variables in different classes in the model. Opposed to that, 'lumpers' argue that differences are not as important as signature similarities. One advantage of lumping is that neat categories simplify complexity hence it is easier to understand. That makes lumping to be more useful in practice, but not necessarily more accurate. Nevertheless, a certain style of leadership is efficient in a particular organisational form; hence the fit between the factors is important. In my opinion the examination of the variables in pairs – as suggested by 'splitters' – doesn't provide us with the whole picture of the configurations because we would lose the joint effect of factors.

Moreover, Khandawalla (1970) argues that organisational efficiency isn't determined by single factors on their own, but determined by the connections between these factors. The organisation is efficient because complementary factors are matched with one another. Based on my previous findings I also share this point of view and follow the 'lumping' method in classifying variables.

During the development of the research frame the real content of the strategies are brought into focus instead of strategy creation process. The four main trends in content research are summed up in Figure 2.

	Single factors	<b>Clusters of factors</b>
	Linking particular strategies to	Delineating clusters of strategies
Static	particular conditions (e.g.,	(e.g., strategic groups) and/or
conditions	diversification to industry maturity)	clusters of conditions (e.g., generic
		industries) and their linkages
	Determining particular strategic	Tracking sequences of clusters of
Dynamic	responses (e.g., turnarounds,	strategies and/or conditions over
conditions	signalling) to external changes (e.g.,	time (e.g., industry life cycles)
conunions	technological threats, competitive	
	attacks)	

Figure 2. A matrix of strategy content research

Source: Mintzberg et al., 1998: 107

My choice of research methodology – taking into consideration the possibilities demonstrated on Figure 2 – is the dynamic conditions research with clusters of factors. In order to overcome the weakness of positioning school – namely extensive use quantifiable economic factors in measuring strategy – qualitative factors are also taken into consideration. In my opinion, the strategies which are embodied in the behaviour patterns of Hungarian enterprises also can be divided into strategic groups. Members of the same group – cluster – invest in very similar factor-combinations during their adaptation to their environment. Consequently, they are well separable from members of another strategic group. Different range of the empirical research can be differentiated in the field, the difference is attributed to the difference in their typological bases.

The empiric researches of Miles and Snow (1978) resulted in nowadays one of the best-known strategic classification in four industries (textbook publishing, food processing, health care, and electronics). The strategy types cover the possible organisational responses to the new environmental challenges: innovation (prospector), consolidation (defender), seek balance (analyser), not having strategy (reactor). Miles and Snow's strategic typology is intensively present in the scientific literature and a great number of research were built on this classification (Antal-Mokos and Kovács, 1998, Hambrick, 1983 and 1984, McDaniel and Kolari, 1987, McKee et al., 1989, Shortell and Zajac 1990, Webster, 1992).

Most of the empirical research done in the field had a focus on the connection between strategy types and performance in relation to the competitive strategies. Some researchers apply the industrial organisation (IO) approach for the analysis of the competition in connection with the business strategies (Hatten and Schendel, 1977, Cool and Schendel, 1987).

Other researches examine the clustering in single industries through developing the theory of the strategic groups, which show similar connections regarding strategic key-variables. Other attempts (Dess and Davis, 1984 or Miller and Friesen 1986) are aimed at creating a strategic set of concepts, such as Porter's generic strategies.

Although the strategic variables are partially different in the literature, for today those variables are formed which are included in a quite standard way in the empirical examinations of the strategy types (Doty and Glick, 1994, Galbraith and Schendel, 1983, Miller and Roth, 1994, Morrison and Roth, 1995). The number of the variables moves between 30 and 50 depending on the specification of the research. Since the 1990's this Figure has stabilized at 40 and became a research standard (Desarbo et al., 2004, Morrison, 1993).

While the positioning school assumes strategy formation as a deductive and conscious process, the configuration school takes the emergent, spontaneous strategies into considerations, too. Through the systematic analysis of the firms' past behaviour, we can identify clusters of common patterns (strategies), but these strategies cannot certainly be ranked.

The content of the strategy can't be entirely isolated from its creation and realization processes: it is born as the result of the selection from the different environmental factors, and the selection always results in giving up and losing another alternative. So it is not advisable to 'prescribe' the content of the ideal strategies, it is only worth calling the attention to the consequences of the given choices.

Competitiveness is an important factor of the research, which can be led back to one starting point of the positioning school, which says that the enterprises' environment is competitive (Chikán and Czakó, 2009, Porter, 1993).

Based on this thought the enterprises compete in their environment and they follow definite behaviour patterns during their competition, which can be described by different structured aggregations of the competition characteristics. The factor-configurations outlined this way are more important in the long term explanation of the growth than the independent effect of any single characteristics.

In the dissertation the strategies are seen as the organisations behaviour pattern. Despite the fact, that the behaviour patterns are very diverse; only some (generic) strategies and configurations – as it is proved by former researches (Antal-Mokos and Kovács 1998) – can be identified based on the consistent chain of their actions.

#### **Research steps**

International methodology to identify strategic configurations was replicated 3 different point in time by Hungarian researchers: Antal-Mokos and Kovács (1998), Antal-Mokos and Tóth (2001), and Hortoványi and Szabó (2006b). The above mentioned researchers examined nearly identical variables (in the last two cases the variables were completely identical), analyzed samples with similar composition (all of them used the actual database of the Hungarian competitiveness research program) and even though they used identical research frameworks, they discovered different (only partially overlapping) strategies. It made the comparison of the strategy types to be very difficult accross years. In order to overcome this barrier, in my dissertation I have introduced a new methodology instead: an integrated analysis of the samples.

The steps of the research were (in italics new steps compared to previous research are highlighted):

- Formulation of the research question
- Overview of the existing literature
- Extension of the interpretation of strategic adaptation, exploring different adaptation possibilities and more thorough examination of the environmental context;
- Formulation of hypotheses on the basis of the existing theory;
- Choice of research methodology to the examined phenomenon;
- Examination of the changes in the macro environment based on the GDP growth
- Joining the "In Global Competition" research program and the selection of variables;
- Making an uniform and cleaned database based on the questionnaire surveys collected in 1996, 1999, 2004 and 2009 as part of the "In Global Competition" research program
- Analysis of the summed-up sample
- Comparison of results with the results of the preceding surveys;
- Examination of the composition and the representativeness of the examined firm sample with reference to the thematic working papers of the "In Global Competition" research programme;
- Description of the examined sample characteristics;
- Descriptive analysis of variables and control variables;
- Further filtering of the variables' data and preparing them for deeper analysis;
- Analysis of variables through the single surveys' subsamples over time;

- Testing the hypotheses relating to the population on the basis of the development of the variables over time;
- Exploration the connections between the research and control/descriptive variables;
- Compression of the variables' data with multidimensional scaling;
- Identification of performance configurations (strategy types) with clustering;
- Examination of the explanatory force of the results with different cluster numbers and based on these, determination of the ideal number of clusters;
- Examination of the connection between control/descriptive variables with crosstabs;
- Test of hypotheses with association and correlation coefficients and crosstabs
- Interpretation of the results and qualitative cross-check of results through managerial interviews.

#### Research background and database selection

The database is made up of Hungarian enterprises, the data was collected in part of the research program called 'In competition with the World' in 1996, 1999, 2004 and 2010 (cf. Chikán et al., 2004, Chikán and Czakó 2005, 2009). Each year around 300-300 enterprises provided data for the research yielding more than 1,200 enterprises for the overall research. The representativeness according to firm size (full time employees) and location had major part in the data selection.

In studies comparing the industries, the control of the measuring regularities is needed, because the relative importance of starting and already operating enterprises changes significantly (e.g. the proportion of start-ups are higher in the service sector than in the manufacturing industry). There is another problem in connection with the employment changes, namely that the taxation considerations can deform the rate of unemployment and self-employment. A similar reliability problem emerges in relation to the application of the total assets and the profit. Finally the characteristics of the industries has to be controlled too, because manufacturing industries are more capital intensive, while service industries are more labour-intensive (Hortoványi, 2008).

The observed corporate set can be regarded representative for medium and large enterprises based on the size. In connection with the owner structure of the enterprises, firms in foreign or public property are over-, and firms in domestic private property are underrepresented. Based on location the proportion of the enterprises in Budapest and in Pest county is smaller in the data base, but the proportion of the firms in the other regions are higher in the sample than in the population (Lesi, 2005). Related to the sample in 2009 the leading researchers of the "In Global Competition" program don't underline the representativeness of the sample, but they emphasize its certain characteristics (Chikán et al, 2010).

In the course of the research, 4 different but partially overlapping questionnaires were submitted to each respondent enterprise. Besides the CEO of the firm, the production, the commercial and the financial manager were asked to fill in a questionnaire tailored to their functions. Thus, the database I was using for my analysis is consisted of more than 4,800 respondents. Hambrick (1981) as well as Hambrick and Mason (1984) proved empirically, that the top managers are aware of the weaknesses and strength of their enterprises, and they track the changes of these factors continuously. The results of Chandler and Hanks (1994) also confirmed that the evaluation of the top managers correlates with the archived sales indexes. Consequently, the data is assumed to provide reliable information for the analysis.

#### 3. Findings, scholarly and managerial implications

I believe that my research makes three main contributions for scholars, practitioners and policy makers. The main contributions of the the dissertation are the following:

- Examination of the strategic adaptation phenomeon on a relatively wide range of litereature.
  Hypotheses were formulated on the basis of deductive methodology. The hypotheses were tested, 6 got approved, 2 got modified, and one got denied.
- ✓ Critical assessment of the literature and former research made on strategic adaptation led to the formulation of an up-to-date and integrated research design.
- ✓ Development of theory by providing answers to the main research questions: (1) In a given environment not only on, but more configurations are viable, (2) but in different environmental circumstances different configurations are dominant. Moreover (3) companies with larger financial, market and lobby power, and with higher organisational capabilities, network position and lower product orientation are more capeable to influence their environment.

#### A broad view of strategic adaptation, ambidexterety and competiveness

The broad view of the results of the strategic adaptation research is shown in Figure 3. Its columns contains the summary of results from each periods and overall for the macroeconomy, environmental uncertainty, followed strategy, proactivity, connotations of the performance dimensions and performance configurations. The result of each period shows us small, volatily structures, while the overal results gives us a broader, more stable structure. This can be identified as the ambidexterity at the macro level.

	1992-1995	1996-1999	2000-2004	2005-2009	Sum
Macro- environment	Stability	New growth path	Top performance	Decline	1 cycle
Environmental uncertainty	Extreme high in internal markets Low in external markets	High in internal markets Low in external markets	Moderate/ high in internal markets Low in external markets	High - all sources of uncertainty	Internal markets seems to be more uncertain then externa markets
Followed strategy	Exploration is increasing to 40%	Exploration is increasing to 64%	At the beginning of the period exploration is more common (71%), then Exploration is increasing to 56%	At the beginning of the period exploration and exploration are balanced, but from 2007 exploration decreases	In a 3-4 year period the pattern of the strategie followed by the companies are the same
Proactivity	The pattern of the capability of influencing the environment is the same on each period.				
Connotations of the performance dimensions	Public relations are negative Export means excellence Competitive advantage comes from economies of scope and low prices	Public relations are negative Export means excellence Financial power is connected structural efficiency High product orientation	Export means excellence Networking increases Financial power is connected structural efficiency High product orientation	Competitive advantage comes from flexibility Networking increases Financial power and structural efficiency is connected flexibility	7 robust dimensions
Performance configurations	Many strategic variables The role of networking is low	Many strategic variables The role of networking is low Grabbing the short term opportunities	The most strategic variables The role of networking is increasing	Retention of fewer strategies The role of networking is increasing	6 and 16 cluster solutions.

Figure 3. A broad view of strategic adaptation from 1992 to 2010

#### The results of hypotheses testing

The results of the hypotheses testing are shown in Figure 4. All the 3 hypotheses for the population are accepted. In addition, 3 out of the 6 hypotheses for the firm level have been accepted, 2 have been modified, and 1 have been denied.

H1 <sub>population</sub> : The economic growth on the macro level	approved		
fosters exploration while recession retains exploitation.			
H1 <sub>indvidual</sub> : The exploitative firms perceive	Modified: The exploitative		
environmental uncertainty higher than explorative	firms perceives the internal		
firms.	environment higher than		
	explorative firms		
H2 <sub>population</sub> : The perception of the environmental	approved		
changes and the capability to influence them is			
independent from the external environment.			
H2 <sub>indvidual</sub> : The proactive firms perceive their	denied		
environment less uncertain than reactive firms.			
H3 <sub>population</sub> : In a given environment more performance	approved		
configuration are viable.			
H3 <sub>indvidual</sub> : The sources of environmental uncertainty	approved		
have different impact on the configurations.			
H4: The explorative firms are able to recognize the	approved		
environmental changes better then the exploitative			
firms.			
H5: The better a firm performs, the better it can	approved		
perceive and influence the environmental changes.			
H6: Exploration and exploitation are typical to different	approved for exploration		
performance configurations.	(p<0,05)		

#### Figure 4. The results of hypotheses testing

#### Value cration for the Hungarian and international research cummunity

The dissertation's primary aim was to add and improve our understanding gained from previous studies (Antal-Mokos and Kovács, 1998, Antal-Mokos and Tóth, 2001, Hortoványi et al, 2006 and Hortoványi and Szabó, 2006b) and as such, to highlight formerly hidden attributes. To achieve this, the four actions suggested by Kim and Mauborgne (2006: 46) was introduced (see Figure 5).

#### Figure 5. Value creation with 4 actions

Eliminate			
Principal Component Analysis			
Counting the average of variables measured on an ordinal scale			
Reduce			
Control variables (7 instead of 10)			
Examine the central tendency			
Data reduction			
Raise			
The international foundation of the research			
The use of former studies			
Longitudinal approach			
Cross references			
Research scope			
Research design and methodology			
Transparency			
Subsamples			
Description of the control variables and the sample			
Missing Value Analysis			
Understanding the phenomenon			
Create			
Integrated research platform			
Simultaneous examination of the macro and the micro economy			
Multidimensional Scaling			
7 robust performance dimensions			
Hypotheses development and testing Identification and description of Explorative, Exploitative and Ambidextrous strategies			
Differentiation of larger, more stable and smaller, more changing structures			
Recognition of ambidexterity on micro and on macro level			

\* \* \*

Summerizing it, the dissertation was born as a result of (2+)5 years of scientific preparation and research. I belive that the research questions in focus are important and timely, the research design and methodologies used are proper and up-to-date, and the contributions are valueable for scholars, practitioners and policy makers on a national and international level.

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