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COMPETITIVE AND COOPERATIVE LEADERSHIP ATTITUDE IN HUNGARIAN SMALL AND MEDIUM ENTERPRISES

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Table of contents

1. Introduction

1.1. Relevance and significance of the topic

The overview of literature on competitivity in economics has shown that the theory based on conventional resources (labour, capital, natural resources) is augmented with theories based on new resources (e.g. control). Corporate competitivity thus already encompasses the difficultly measurable soft factors besides the methodologically well measurable hard factors (profitability, efficiency) taking us to the area of *interdisciplinarity*. External impacts (economical-political, social-cultural) of the environment probably exert stronger effects giving birth to numerous assessment studies. According to current views internal factors can not be ignored either as enumerating these factors lead to a more precise definition of corporate performance. For example corporate leaders have a decisive role in achieving competitivity. The potential for correction of errors by former analyses gives headway of the *micro-level approach* which also allows for a more efficient forecast as it considers management decisions and attributes. This confirms that business actors are subjectively or broadly *rational;* they also take into account ecological (social, nature-related) considerations besides economical aspects. For attaining competitivity therefore not only measures of rivalry are applied but the option of cooperation with the competing parties is considered. In this context *rivalisation* represents economical aspects, increasing individual utilities while *cooperation* represents social considerations and the increasing of collective utility and minimisation of individual losses, too. The earlier can be more effective on the short run; on the long run nevertheless ignoring broadly interpreted mutual interest is unsustainable. In itself none of them serves efficiency but their appropriate blending, *coopetitivity*. This form offers the SME sector as one of the pillars of economy an extreme development potential which helps tackle „glocal" challenges, that is global and local (regional) challenges. At the same time *Hungarian SME-managers* are burdened by these mixed strategies. They have to adjust to uncertain economical-political environment and to its constant variation. They have to deal with weaknesses in social-cultural norms; furthermore they are expected to lead social development with good examples as cultural norms could not follow economic development. In this context personal characteristics as knowledge, abilities, skills and attitude have decisive role. This called *behavioural economics* into existence. Behavioural economics tries to unveil individual motives behind success and competitivity based on analysing the human factor. This branch of economics is multidisciplinary, uses a micro-level approach, interprets rationality in a broad sense, and operates with human capital as a new resource while assessing soft factors like attitudes. Studying attitudes is important as they are relatively enduring stances which direct behaviour. In business this means a long term influence on actions defining entrepreneurial profitability. The significance of my research – according to my expectations – is that I define one of the internal corporate factors, the rivalling and cooperative attitude and assess its

impact on competitivity. After the description of leadership attitude I collate these with economic indicators and try to identify competitive and cooperative attitude's impact on corporate profitability. In Hungarian context only a few studies were made in this topic and it can be considered unique that competitivity is measured with profitability, efficiency and growth indicators based on accounting balance data.

1.2. Objectives of research

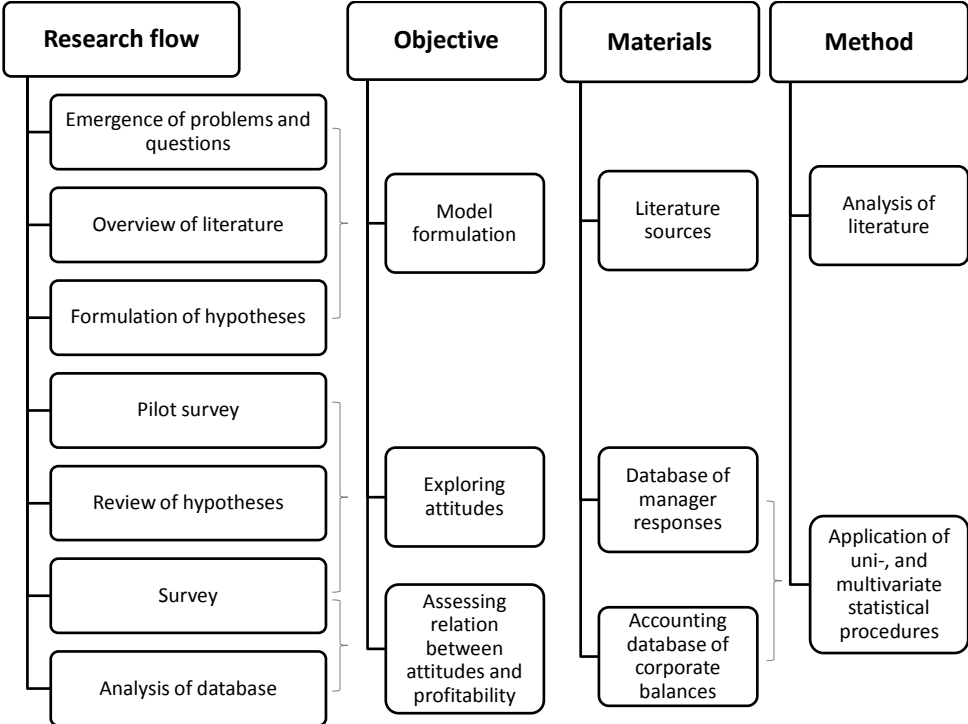The context of objectives flow of research, assigned sources and methods are shown on Figure 1.

Figure 1. Context of objectives flow of research, assigned sources and methods
(Source: own edition)

2. Material and method

2.1. Hypotheses

After studying field literature my insight was that the assessment of the role of leadership attitude in small and medium enterprises is missing. This would allow for the enumeration of most influential factors by measuring rivalling and cooperative attitude and could endeavour to provide an analysis of their impact on corporate efficiency (see Figure 2.).
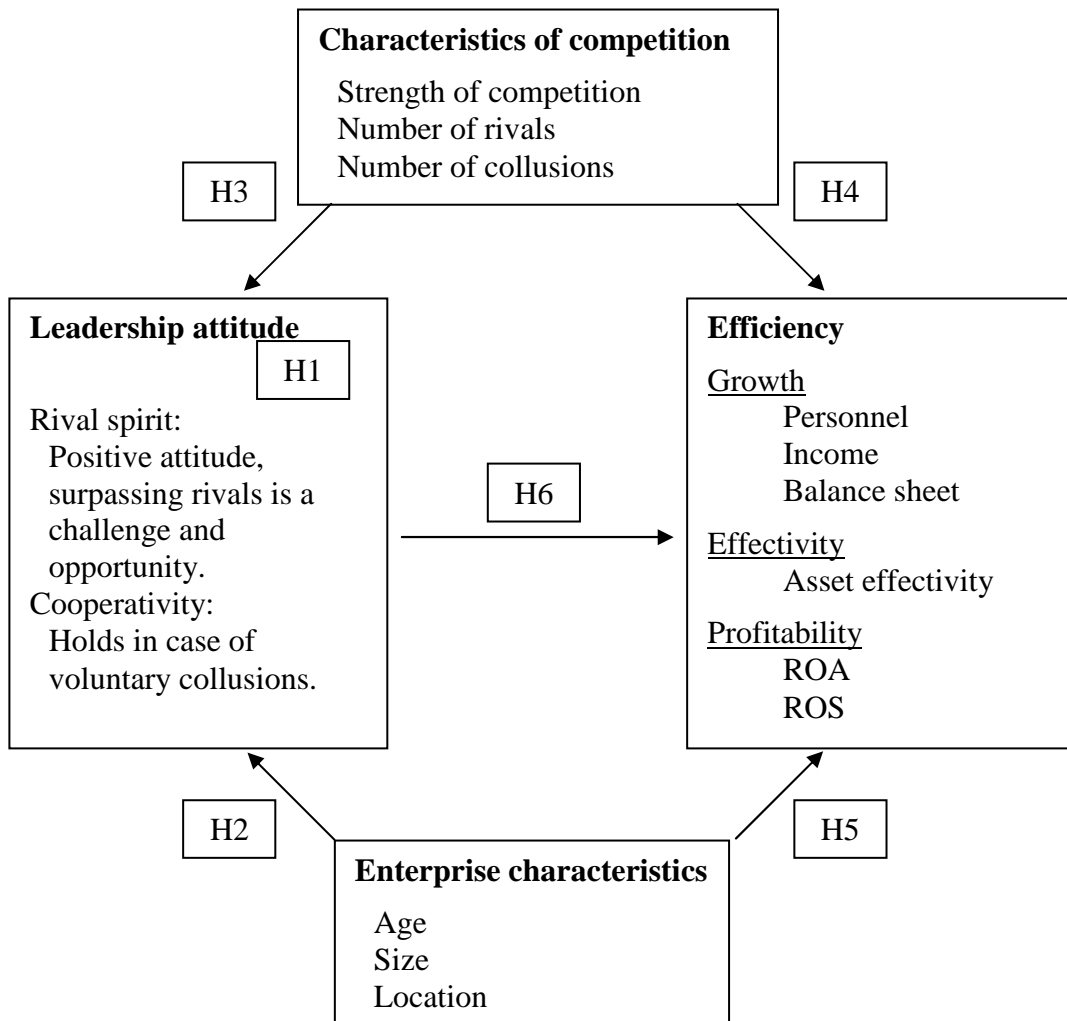
Figure 2. Theoretical framework of the research: the examined factors of leadership attitude and efficiency
(Source: LUMPKIN and DESS 1996[1] p. 152, reedited)

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[1] LUMPKIN, G. T., DESS, G. G. (1996): Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance, The Academy of Management Review, Vol. 21. No. 1. pp. 135-172.

Based on the formulated contextual framework, my hypotheses are as follows:

H1. Rivalling and cooperative attitude are well distinguishable.

Rival spirit is the positive attitude of a rivalling individual to competition where surpassing the rival and victory is the objective. This is not considered as threat by the actor but as a challenge and possibility. If he can not acquire advantage he is not disturbed by the rival party acquiring it.

Cooperativity holds in the case of voluntary or benevolent, necessary, non-enforced collusions. The manager is willing to accept a short term unbeneficial position for a long term effective cooperation. He accepts the other party's interests but also wants to claim his own interests and thus sees a realistic chance for a mutually beneficial solution or at least tries to find this.

H2. Some characteristics (age, size, location) of the enterprise serve as a distinctive factor for leadership attitude.

According to this hypothesis those enterprises have more rivalling leaders which belong to a young but already formulated enterprise, or those which are medium sized, or those which are located in the region of Central Hungary.

H3. The intensity of industrial competition is a distinctive factor

According to this hypothesis stronger competition in the industry is coupled with corporate leaders cooperating with competitors more frequently.

H4. The intensity of industrial competition is a distinctive factor for corporate efficiency.

According to this hypothesis firms facing stronger competition are more efficient.

H5. Some attributes of the enterprise (age, size, location) serve as a distinctive factor for corporate efficiency.

According to this hypothesis those enterprises are more efficient which are young but already formulated, or those which are medium sized, or those which are located in the region of Central Hungary.

H6. The competitive and cooperative attitudes have an impact on corporate efficiency

H6a. According to this hypothesis leadership attitude has an impact on corporate efficiency.

H6b. According to this hypothesis the most efficient enterprises are those with coopetitive managers.

2.2. Sources of research

The research received a great extent of aid from the program with the ID **TÁMOP 4.2.2.B-10/1-2010-0011** titled „**A tehetséggondozás és kutatóképzés komplex rendszerének fejlesztése a Szent István Egyetemen**". This allowed for the procurement of an email database extended with certain fundamental data of the enterprises. Additional help was provided by the **Szent István University's Kosáry Domokos Libarary and Archives** who helped undertake the on-line survey by providing webspace.

The database provided by the data servicing company contained all the registered domestic companies' information up to date and on a full scale. The composition of the listing was based on the definition of SMEs laid down in Act XXXIV (2004) 3§ and additionally email availability. Based on regional and headcount data I decided to pursue a layered sampling. I did not plan to go beyond a regional detail (down to the county level) in the analysis; furthermore the number of available enterprises in respective counties could have probably limited the size of the database due to the bottleneck. From the respective layers the data provider randomly selected sample enterprises from the available full company list maintaining the proportions of the original multitude as communicated by the Central Statistical Office (CSO) Regional Information System[2] (2011). The sample is representative regarding the defined headcount and regional variables and by providing an equal chance of enterprises adhering to the criteria to get into the list selected. This does not mean that these enterprises would be representative with respect to rivalling and cooperative attitudes. Random samples however well represent the original population, which is not being subject to the sample being representative to all verifiable criteria.

The acquired database contained data of 8541 SMEs (Table 2.), which is 27.3% of the operating enterprises with a personnel of 10-249 (2010 end of year data: 31 320) (CSO, 2012[3]).

The database contained additional official registration company data over the email address of the SME executives. Among others the founding year, seat, headcount, activity code (TEÁOR), annual turnover, gross and net profit and total assets.

The source of my primary research was the on line survey distributed at the end of September, 2012 providing the database for the analysis. The two-fold query via email resulted in 242 answers from SME executives, which is approximately 3% response rate.

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[2] Based on data from the National Regional Development and Reorganisation Information System, Interactive Analysis System, CSO, Regional Statistics, Business organisations, 12th November, 2011

[3] Number of operating, actual new, actual terminated enterprises by headcount categories (2005-2010) General economic indicators, business and non profit organisations 30th May, 2012.

2.3. Methods of the research

To measure attitudes self registration questionnaires was chosen as the technical implementation was easier and based on the topic I expected a higher response rate this way.

In analysing attitudes in social studies attitude scales are used which are intended to give an objective measurement scale. This results in a pre-defined measuring tool used instead of the subject's judgement thus allowing for identifying the intensity of the attitude. For measuring the attitude I used the Likert-scale in my survey because it is easily interpretable, provides sufficient information, can be well analysed with the SPSS software and fitted the constraints posed by the online survey. The scales can contain an even or odd number of possible answers which raises the issue of the *zero point*. In my opinion attitude has a direction but I can also imagine someone to have a neutral attitude toward something thus I provided an odd number of possible answers on the scale. For other parts of the questionnaire I applied both metric (interval and proportional) and non metric (nominal and ordinal) scales form the primary forms of measurement scales.

The final questionnaire contained closed form questions (with predefined versions of answers) and response was voluntary. Contact with the potential respondents was made via email and the survey was undertaken through an online interface. In general answering is influenced by the situation of the survey in my case the lack of personal contact might have had an impact. This on the other hand eliminates errors from the questioner's side (e.g. sympathy, etc.). Further advantage of a survey made through the Internet is that a hardly accessible target group (in my case enterprise executives) might be more inclined to responding as more time is available for thinking and filling out the questionnaire than in the case of a personal meeting. Answers can be more precise, the interviewee can consider his answers more carefully as he is not uneasy because of the presence of the surveyor. As thousands of questionnaires can be sent out simultaneously this shortens research time. Additionally this method is cheaper than paper-based survey with surveyors. There is a further technical opportunity of presenting images (visual experience) and to compose a more complex questionnaire by incorporating conditional jumps, branches in the logical chain of the survey.

Seven different types of questions were used in the Internet survey: simple choice, multiple choice, open value entry, value scale, ranking, response matrix and yes/no questions. The interface contained one image and one jump.

Data obtained through quantitative research was analysed with statistical methods based on the SPSS v20 software.

3. Results

3.1. Analysis of leadership attitude

Assessment of Hypothesis 1. (H1)

First, the attitude of executives was identified. For this I evaluated statements in the third segment of the questionnaire. From the 24 statements 9 were control purpose. After performing cluster analysis and principal component analysis 13 out of the 15 attitude related statements were incorporated in the analysis. For these statements the hierarchical cluster analysis was performed based on the Ward-method together with principal component analysis (Table 1.). Both methods suggest grouping the variables into five categories with exactly the same statements.

Table 1. Principal component analysis with Varimax rotation

	Principal component				
	1	2	3	4	5
Our company might yield in order to realise collaboration with our competitors.	,880	,221	,009	,079	,044
I can accept a momentarily disadvantageous situation for a long term productive cooperation with our competitor.	,866	,047	,019	,030	,031
I strive to cooperate with the competitors to reach a better bargaining position.	,755	,429	,080	-,148	,068
Descent business behaviour characterises long term cooperation with our competitors.	,054	,834	,072	,206	,011
There is place for mutually beneficient cooperation between competitors.	,208	,753	,132	,094	-,007
Trust characterises cooperation with my competitors.	,474	,731	-,036	-,047	,051
I adapt the new methods and approaches ahead of my competitors.	,160	,050	,815	,316	,057
Participation in competition in the industry is a chance for victory.	-,030	,033	,789	,016	,271
I strive to be ahead of my competitors in our activity.	-,030	,152	,708	,416	,139
I put emphasis on research and development and innovation.	,045	,088	,269	,882	,118
In the last 5 years we regularly introduced innovations.	-,042	,133	,186	,879	,076
I prefer higher risk projects in the hope of higher return.	,191	-,124	,098	,166	,842
Competition is a joyous challenge for me.	-,075	,179	,330	,035	,773

(Source: own analysis)

Based on the five groups of the variables I prepared five partial indices which I corrected with the principal component weights. The partial index „Making a compromise" was developed from the first principal component, the „Fairness" (with competitors) partial index was developed from the second principal component (PC). These two partial indices composed the „Cooperativity" index in the graphical representations. The third PC gave the „Striving to be a leader", the fourth the „Anticipate changes", the fifth the „Preferring competition" partial

7

indices respectively. These partial indices were combined to get the „Rival spirit" index. The indices were distributed in for equal element size categories (low, moderately low, moderately high, and high) with the visual binning method of SPSS.

This was followed by the grouping of the executives as observational units (Table 2.).

Table 2. Titles of leadership clusters based on the indices[4]

| Cluster | Nr. | Index | | | | |
| | | Cooperativity | | Rival spirit | | |
		Making a compromise	Fairness	Striving to be a leader	Anticipate changes	Preferring competition
Mediocritas	35	M. low	M. low	Low	M. low	Low
Reserved	21	Low	Low	Low	Low	Low
Cooperative	36	High	High	Low	Low	Low
Coopetitive	57	High	High	High	M. high	High
Rivalling	20	Low	Low	High	High	High
Correlation (χ^2 sig.)		p<0,001	p<0,001	p<0,001	p<0,001	p<0,001
Strength (Cramer's V)		0,476	0,440	0,392	0,496	0,342

(Source: Own analysis)

Based on the results firstly I titled the second cluster of executives „Reserved" as this received the lowest values in all indices. This cluster contained 21 executives. The third cluster received the title „Cooperative" as the managers in this group received high values in the „Cooperativity" index and low values in the „Rival spirit" index. Altogether 36 executives were enlisted here. The fourth cluster reached high values in all indices thus I named this „Coopetitive"; this cluster had the highest element number of 57 executives. The fifth cluster is the opposite of the third as it received low values in the „Cooperativity" index and high values in the „Rival spirit" index, so with 20 units this became the „Rivalling" cluster.

For the notation of the first cluster I used a dot chart where on the horizontal axis the Cooperativity index, on the vertical axis the Rival spirit index was mapped. The two indices are weakly positively correlated as a tendency (p=0,060; Spearman's $\rho = 0,172$).
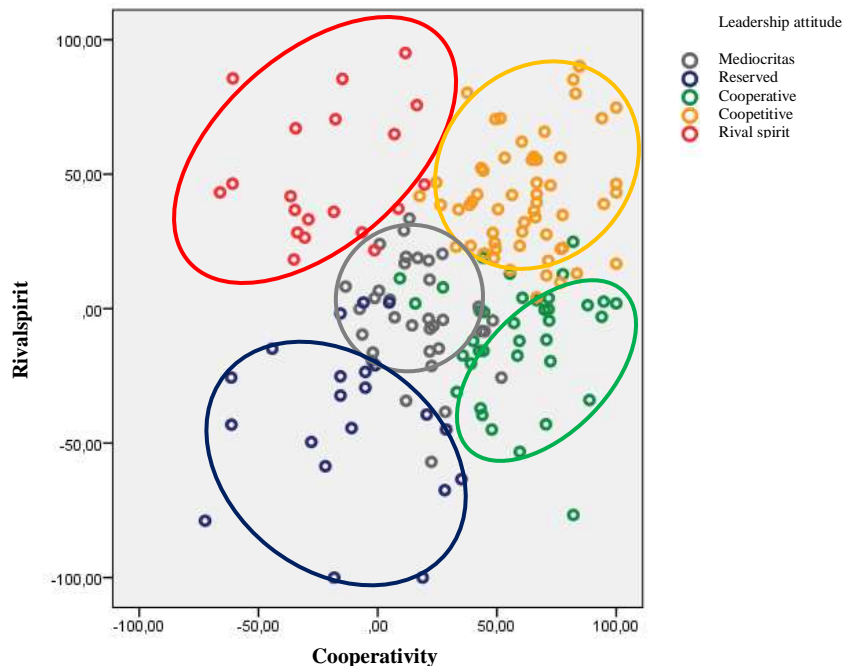
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[4] m = moderately

8

Figure 3. Location of leadership clusters in the dimensions of cooperativity and rivalisation (Source: own analysis)

The figure perfectly shows that the first cluster marked with grey is located between the other four clusters therefore I denoted this group (not moderately reserved as I planned based on the index values but) for their selection of „golden mean"[5] as „Mediocritas". This cluster contained 35 executives.

For confirming the denotation I used crosstab analysis (Table 3.) to examine connections between non metric variables. Besides the evaluation of statements the questionnaire also contained additional questions on attitude to support analytical results with revealed opinion data.

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[5] „Aurea mediocritas", or „The golden mean" following the Latin expression.

Table 3. Collation of attitude types and some additional characteristics of the enterprise operation

	Did you target growth?	Do you react fast to changes?	Porter's market strategy[6]	Number of innovations:	R&D share of expenditures	Time spent with monitoring the competition	Number of Ideas taken over	How frequently do you cooperate with your rivals?	How many competitors do you cooperate with?	Do you plan further cooperation with competitors?
Mediocritas	No	Yes							Medium	No
Reserved	No	No	CL+CO	Low	Low	Low	Low	Rarely	Few	No
Cooperative	No		CL.	Low	Low				Many	Yes
Coopetitive	Yes	Yes		High	High	High	High	Frequently	Many	Yes
Rivalling	Yes	Yes	Diff.	Medium	Medium	Medium	Medium	Never	Few	No
Correlation (χ^2 sig.)	p=0,026	p=0,012	p=0,007	p=0,009	p=0,003	p=0,150	p=0,072	p<0,001	p<0,001	p<0,001
Strength (Cramer's V)	0,263	0,246	0,251	0,257	0,289	0,197	0,217	0,319	0,318	0,563

(Source: Own analysis)

All denotations for the clusters of attitude were confirmed by the actual behaviour.

Hypothesis 1. is justified by the accomplished analyses showing that competitive and cooperative attitudes are well distinguishable. It was confirmed that **rival spirit** is a positive attitude to competition where leading position and victory is the objective. This rivalisation (innovation, renewal and risk taking) is considered as a challenge and possibility by the actors. The **cooperative** attitude encompasses willingness to compromise where the manager can accept a temporarily disadvantageous situation for the sake of a long term productive cooperation. The endeavour is to reach a mutually benign, fair and descent resolution.

Examining Hypothesis 2. (H2)

I analysed if there is any statistically justifiable difference between the leadership clusters. First I mention that according to the characteristics of the product (or service) provided there is no difference in attitude (p=0,850; Cramer's V=0,126), which has to be stressed as this shows that no decisive direction applied by the executives exists for neither homogenous nor differentiated products. Thus the cooperative or competitive strategy to be applied is not constrained by the uniqueness or the mass character of the product. For the same reason I find it

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[6] Abbreviation of Porter's market strategies: Cost leader – CL, CO – Concentrating, Diff – Differentiating.

significant that no regional difference exists for the attitudes (p=0,860; Cramer's V=109), that is the Eastern region of the country has the same distribution of cooperative and competitive attitudes as the Western region.

Tendency exists in the difference between clusters by enterprise size (p=0,059; Cramer's V=0,211). The share of „Golden mean" in enterprises with 50-249 personnel is higher than average, the „Reserved" is more typical for companies with a headcount of 20-49 persons, „Cooperative" is more likely for SMEs with 10-19 employees, „Rival spirit" and „Coopetitive" is higher for 20-49 and 50-249 employee firms.

Based on targets set by the enterprise statistically justified difference showed for the clusters (p=0,007; Cramer's V=0,251). „Reserved", „Mediocritas" and „Cooperatives" typically followed cost leader strategy, while „Rival spirit" and „Coopetitive" typically followed differentiating strategy in Porter's classification.

I applied multivariate logistical regression to examine if there is any connection between enterprise characteristics and leadership clusters. Based on the data I confirmed that those who targeted moderate growth belong with 4.38 units (1.3%) less likelihood to the „Cooperative" cluster than to the „Coopetitive" compared to those targeting strong growth. This means that stronger growing companies are more likely to belong to the „Cooperative" group than to the „Coopetitive" group (ceteris paribus). Those who react with delay to changes are more likely to belong to the „Cooperative" group than to the „Coopetitive" group compared to the immediate responders (ceteris paribus). Cost leader strategy followers were 2.26 units (9.5 times) more likely to be „Cooperative" than „Rival spirit" compared to concentrating strategy followers. At the same time the followers of the cost leader strategy turned out to be 1.58 units (4.87 times) more likely to be „Cooperative" than „Coopetitive" than followers of concentrating strategy. Furthermore increasing the age of the firm with one year increases the chance of leaders being „Reserved" than „Cooperative" with 0.015 units (16.2%) ceteris paribus.

Small enterprises with 20-49 employees – as compared with enterprises with 50-2249 employees - had 1.89 units (85%) less chance to belong to the „Mediocritas" cluster than to the „Rival spirit" cluster, ceteris paribus. The tendency shows that medium enterprises have a higher probability than small (20-49 employees) enterprises to be in the „Mediocritas" cluster than in the „Rival spirit" cluster.

The 2nd hypothesis which proposed that corporate attributes give a distinction in leadership attitude was justified for the headcount, porterian objectives, enterprise age, growth strategy and reaction to change categories. It was not justified for product type and location, though.

Analysis of Hypothesis 3. (H3)

Among the external conditions I examined the nature of competition in the industry. In this context I analysed the real intensity of competition, the number of actual competitors and the number of coopetitive relationships. (Table 4.).

Table 4. Collation of attitude types and nature of competition

	Competition	Number of competitors
Reserved	None	Few(-5)
Rivalling	Rather weak	Few (-5)
Mediocritas	Moderate	Medium (6-10)
Coopetitive	Rather strong	Medium (6-10)
Cooperative	Rather strong	Many (11-)
Correlation (χ^2 sig.)	p=0,142	p=0,049
Strength (Cramer's V)	0,216	0,214

(Source: Own analysis)

From the three relevant questions of the survey only one proved to be significant. According to this statistically firm difference exists between leadership clusters (attitude) and the number of actors considered actual competitors (p=0,049; Cramer's V=0,214). Contrary to my assumption though not that actor was competitive who had to deal with many rivals. Both the „Reserved" and the „Rival spirit" leaders reported low (5 or less) number of direct competitors. The executives in the „Mediocritas" and „Coopetitive" cluster deal with more competitors, actual 6-11 rivals are mentioned. The most competitors however are reported by the „Cooperative" leaders. The questionnaire does not reflect upon the reason for this, whether cooperation turned up to be the strategy because of the too high number of competitors, or because of their cooperative attitude do they feel that too many rivals are to be dealt with. In the case of the competitive leaders it is also an open question if they compete because of the low number of rivals or had only a few rivals remained because he became competitive. The relationship was nonetheless statistically justifiable.

Although it can be stated with only 85% significance (p=0,142; Cramer's V=0,216) it is nevertheless interesting that similar phenomenon could be observed between attitude and the intensity of competition. The „Reserved" leaders reported that there is no competition at all. This can be in connection with the previous statements in the sense that they realise a concentrating strategy and focus on a narrow market segment. The „Rival spirit" leaders reported weak competition while „Mediocritas" reported moderately strong. The „Coopetitive" and „Cooperative" clusters reported a rather strong competition. It is possible that cooperation was chosen because they sensed a strong competition, or they sensed a strong competition because they were cooperating. It is possible that competitive

leaders chose competition because of weak rivalry or the competitiveness itself made them sense competition as weak.

The 3rd hypothesis which stated that the nature of competition in the industry (intensity of competition, actual number of rivals, number of coopetitive connections) has an impact on attitude was proven. Based on the analysis my expectation stating that leaders facing stronger competition in the industry are more inclined to cooperate with their rivals was justified only at an 85% confidence level but nevertheless the tendency was present.

3.2. Analysis of corporate efficiency

Assessment of Hypothesis 4. (H4)

In the examination of efficiency I considered the headcount, sales income and balance sheet total indicators. Furthermore from the available data I calculated efficiency (asset efficiency) and profitability (ROA – Return on Assets, ROS-Return on Sales) indicators.

The classification of enterprises by efficiency can be done in multiple ways. My objective was to classify enterprises in a manner to diminish absolute size differences and consider growth and earnings indicators simultaneously. I found the solution in identifying the principal components of annual growth (headcount, sales income, total balance sheet) and the annual profitability and efficiency (AE, ROA, ROS). The average growth of the principal components was calculated with the Ordinary Least Squares (OLS) method, which gives estimation by minimising deviation sums of squares. This method evens out deviations of alternate directions and gives a larger weight to larger deviations.

Hierarchical clustering with the „nearest neighbour" method did not provide any proof for similarity of asset efficiency and other variables for any year. The principal component analysis confirmed that the communality of this variable did not reach the minimally necessary level.

I undertook a cluster analysis (Ward-method) for the seven variables together with a principal component analysis (PCA). Both methods showed that the variables form two groups (Ward method: two clusters, PCA: two principal components) with exactly the same elements in the respective years. The profitability indicators (ROA, ROS) were grouped in one principal component, the growth in the other one (headcount, sales, total balance). Through the formation of principal components I paid attention to inter-variable correlation, independence and the strength of correlation. The Bartlett-test ($p < 0,05$), and the KMO-value ($KMO \geq 0,5$) both showed for all cases that the variables are appropriate for factor analysis. The explained variance in all cases was higher than 60%.

In the assessment only those enterprises were included which were at least 5 years old. In many cases however, an interim missing value caused that no principal component was generated for the given enterprise. Finally I classified the 194 enterprises having all the necessary data into four categories by the „Growth"

and „Profitability" principal components (dimensions). Those showing positive values for both variables were titled „Competitive". The enterprises which only grew in size were titled „Showing growth". I called the companies which did not grow but earnings indicated profitability as „Profitable". Finally, those enterprises which showed decline in both indicators were classified as „Not competitive". The subcategory counts were as follows: 45 „Competitive", 46 „Showing growth", 54 „Profitable" and 49 „Not competitive" (Figure 4.)
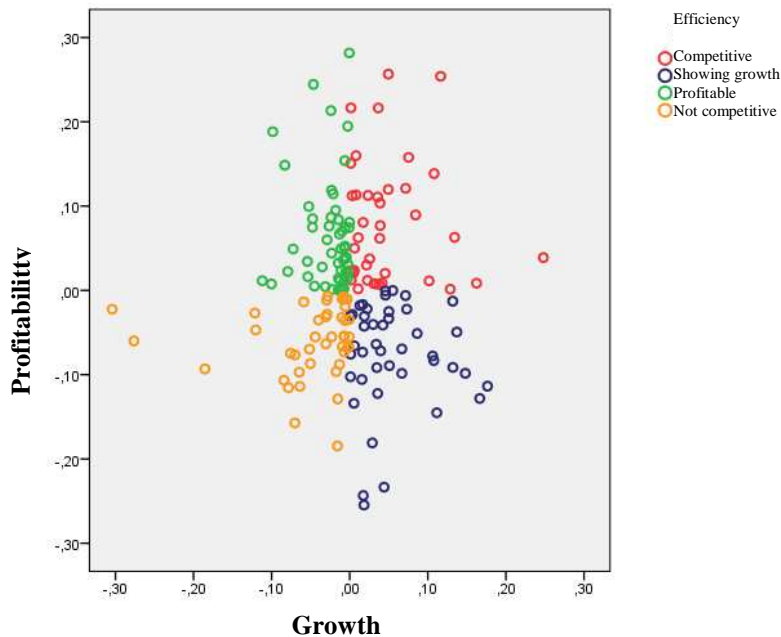

Figure 4. Distribution of enterprises by the dimensions of „Growth" and „Profitability" (source: own analysis)

The 4th hypothesis which stated that the nature of competition in the industry has a connection with the efficiency of the enterprises was not justified. The expectation that companies facing stronger competition in the industry are more efficient was not fulfilled. According to the analysis both „Competitive" and „Not competitive" enterprises can be found in either stronger or weaker competition markets.

Assessment of Hypothesis 5. (H5)

Based on the attributes of the enterprise (headcount category, age, location, life cycle position) and using crosstab analysis there was no statistical difference between efficiency categories. Weak connection was shown between porterian strategies and efficiency (p=0,088; Cramer's V = 0,158). The „Non competitives" and the „Profitables" realised a cost leader strategy. The concentrating ones were typically „Showing growth" while differentiating firms were likely to be „Competitives". I applied multivariate logistical regression to check for the

14

connection between enterprise attributes (headcount category, age, location, life cycle position, porterian strategy) and efficiency categories but no significant correlation emerged (p=0,200).

Using multivariate variance analysis to examine corporate attributes statistically significant difference could be seen in „Profitability". Additional analysis showed that regional location, number of personnel and life cycle position had significant distinguishing effect on „Profitability". In addition, a weak tendency of relationship was identified between porterian strategy and „Profitability", too. Distinguishing by „Profitability" the firms with 10-19 employees are significantly different from 20-49 employee enterprises (p=0,048) in that smaller enterprises showed larger growth rates. A weak tendency was shown for the 10-19 employee firms to be even better than 50-249 employee companies (p=0,097) in growth. From the aspect of porterian strategies the cost leaders were separated well from those following a differentiating strategy (p=0,022). The cost leaders targeted cost minimisation and the supply of a mature product; they thus achieved higher earnings compared to those targeting a unique or differentiated product supply.

Furthermore the age of the enterprise and the „Growth" indicator also turned out to be in correlation. The connection is a weak negative correlation (p=0,002; Spearman's $\rho = -0,226$) that is, with growing age the growth rate diminishes. This underlines the natural process of adjustment to a saturation level. The initial accelerating growth is followed by saturation which slows growth down. The market can be saturated with the given product if the company is not able to react flexibly or to innovate. This can be followed by a decline even despite the mature technology and low cost levels maintaining product profitability for a longer while.

The 5th Hypothesis stating the connection between company attributes and company efficiency was justified for the age of the company and „Growth", and the regional location, personnel size and life cycle position and „Profitability" relations.

My expectation that young but already evolved companies and medium size companies are more efficient could not be directly proven. Nonetheless the decline of growth rate with the increase of age and the decline of growth rate with the increase of company size was justified showing indirectly that medium enterprises can achieve appropriate results.

3.3. Analysis of the connection between leadership attitude and corporate efficiency

In the followings the analysis of the fundamental relationship of the dissertation will be presented, notably if there is a connection between leadership attitude and efficiency. For this first the thorough examination of data was necessary to consider only those years of the balance data where the responding executive was directing the company. Starting from the 194 enterprises where

minimum 4 data was available I filtered out those where the executive is in his position for less than 5 years. Following this step I filtered out balance data for the remaining companies which were earlier than the present executive's entry time. For example if the manager examined was in his position for seven years I filtered out data for 2005 and before. This meant cutting the data in more than quarter of the cases (46 enterprises, 27%) also effecting classification into efficiency categories.

Based on this the results presented in the next sections are representing the results obtained exclusively under the responding executive's operation. In the previous sections this was not taken into consideration. The classification based on efficiency was accomplished identically to the previous sections. I generated the clusters and principal components of growth (headcount, sales income, total balance) and profitability (ROA, ROS) and calculated average growth rates using OLS. Altogether 170 firms were classified into these two dimensions, 48 enterprises turned out to be "Competitive", 38 were "Showing growth", 44 were "Profitable" and 40 "Non profitable" (Figure 5.).
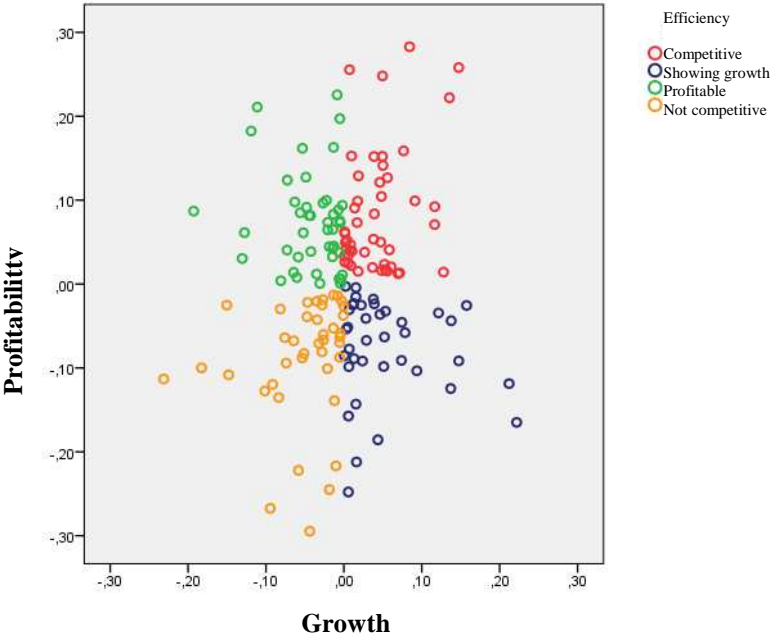

Figure 5. Distribution of enterprises involved in the analysis of efficiency and attitude by the dimensions of „Growth" and „Profitability" (source: own analysis)

Assessment of Hypothesis 6. (H6)

I collated the attitude of executives with the efficiency categories of the enterprises. Crosstab analysis suggested with a 90% confidence that there is a weak

tendency of connection between categories of efficiency and attitude (N=118[7]; p=0,088; Cramer's V=0,232). The „Reserved" ones were typically „Not competitive". Those in the „Mediocritas" and slightly more cooperative than rivalling were typically „Profitable". The highest share among those „Showing growth" was of the „Coopetitives" while „Rival spirit" was more typical among „Competitives".

I used multivariate logistical regression to examine connection between efficiency and leadership attitude. The results showed that the attitude variable contributes (p=0,032) to the correction of the model. Attitude explains approximately 18.5% of the total variance of the dependent variable. The model categorised the cases correctly in 37.5% based on attitude which is more than the minimally expected 31.4%. I find this result remarkable despite the weak correlation and minimal correction impact on the model as it provides a statistically justified connection between attitude and corporate efficiency. Furthermore no strong relationship was assumed originally but that the inclusion of this soft factor will aid understanding differences between company efficiency. The incorporation of attitude improved understanding of efficiency with 12.2% which can be considered an excellent result.

With the verification of this hypothesis additional variables could be included in the logical regression. Actually I used this method for the assessment of relationship between attitude and efficiency initially so that I would be able to extend the analysis with additional variables later. Thus with the help of this model I collated the assumedly influencing variables considered according to the previous results with the efficiency categories. According to the results at least one included variable contributed to the improvement of the model (p<0,001). The complete model categorised the cases correctly in 78.2% based on the attributes involved. The combination of the 11 independent variables[8] explains approximately 87.7% of the dependent variables' variance. The analysis shows that the following variables are verified statistically to give contribution to the improvement of the model:

- *Leadership attitude* (p=0,001),
- *Company attributes:* age of the enterprise (p<0,001);
  Porterian strategy (p=0,003);
  Life cycle position (p=0,010);
- *Demographics of the executive:* sex(p=0,002);
- *Nature of competition:* intensity of competition (p=0,001), and
  Number of cooperations with rivals (p=0,004).

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[7] For 169 executives could the attitude be identified from the fully answered questionnaires. Altogether 170 firms had executives for more than 4 years and balance data available. Both criteria completely however only for 118 cases were fulfilled.

[8] The minimally necessary proportion of cases and variables(10:1) had to be maintained in this case, this was 118:11; so passed.

Logistical regression works with dichotomous independent metric variables thus not allowing for example for the inclusion of regional location. In calculations it assumes in addition that the variables beyond the two examined variables are fixed (ceteris paribus). To extend the range of influencing variables and to explore the most important ones I used decision tree mapping. This classification model is a tool to explore or confirm classifications. It creates rules and tells which variables defer an enterprise into a given efficiency group while at the same time explores interactions between interactions among the variables.

The CHAID and the full scale CHAID-method is statistically founded and examines three levels of depth, the CRT method however examines five levels but as a drawback only creates binary branches (Figure 6.)
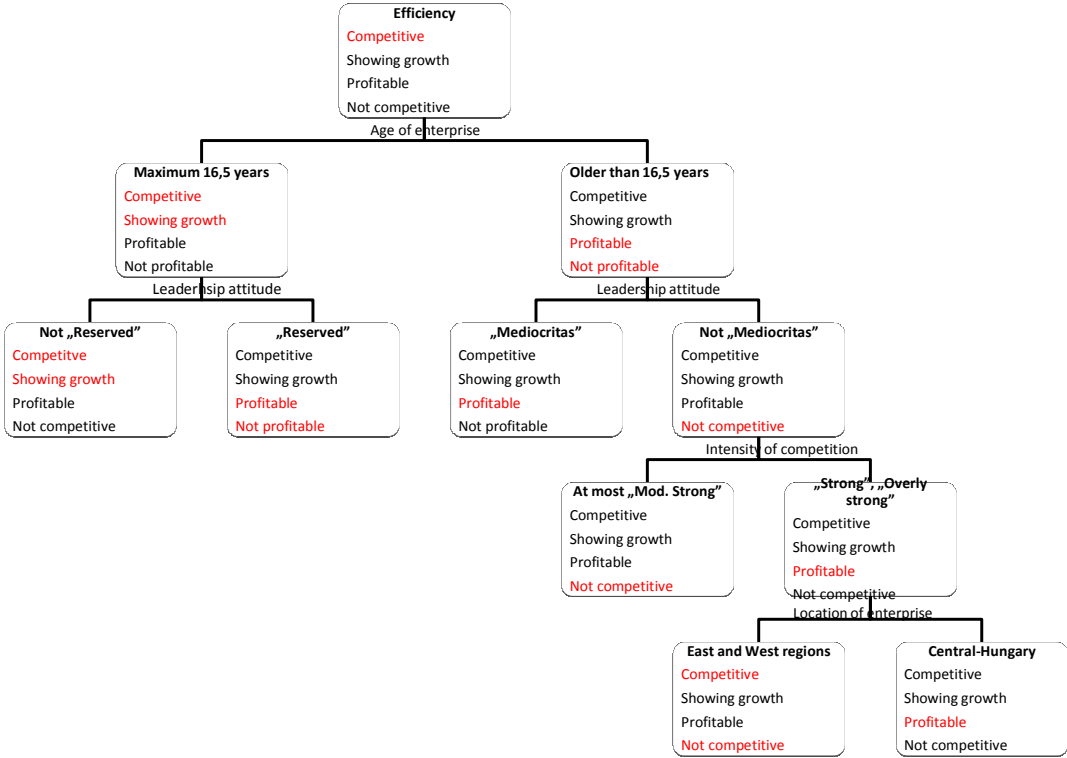

Figure 6. Decision tree prepared with CRT method (source: own analysis)

I developed a four level deep tree diagram where the first node was the age of the enterprise; the second node was for both branches the leadership attitude. This can be considered as remarkable as among the 14 variables included in the analysis this turned out to be the second most important in the formation of homogenous groups. On the third level the intensity of competition while on the fourth level the location can be found.

I was interested in which variable of the attitude (rival spirit of cooperativity) has more significant impact on efficiency. I removed the attitude variable and inserted the Rival spirit and Cooperativity indices in the model. In this

case the age of the enterprise was again of primary importance for efficiency followed by the Rival spirit index. I found that the rivalling firms are more likely to be „Competitive" while less competing firms are more typically „Showing growth".

Part „a" of the 6th hypothesis stating the impact of leadership attitude on efficiency was verified.

The methods applied identified the first three or five most influencing factors among which leadership attitude can be found. The attitude is the third most important factor in the 14 involved variables. These analyses statistically confirmed the significance of this result even despite the weaker explanatory force. At the same time considering the weak tendency-like connection revealed by the crosstab analysis and some results of the decision tree developed by the CHAID-method it would definitely be advisable to verify and confirm these results.

Part „b" of the 6th hypothesis asserting that the coopetitive leadership attitude leaders have the most efficient enterprises was not proven. Based on the examinations the most efficient were the clearly rivalling attitude leaders' enterprises.

3.4. New and innovative scientific results

The following four points summarise the new and innovative results of my dissertation:

- **I formulated a new model for the definition of connection between competitive and cooperative attitude and efficiency of the enterprise.**
  The model aiming at the exploration of entrepreneurial orientation by LUMPKIN and DESS (1996 p. 156) served as a basis for my own model where I examined the connection between leadership attitude and efficiency.
  - Contrary to the original model the starting point of my model was not orientation but competitive and cooperative attitude. These two attitudes are well distinguishable as I examined already existing enterprises and their executives and not entrepreneurs aiming at starting or reviving an enterprise. Second, when defining rival spirit not an aggressive competition but a positive opportunity was considered with respecting „the live and let live" principle. Third, the attitude towards competitors and not the attitude towards work activities was considered for the executives.
  - After reviewing the literature I considered that the most relevant factor of the environmental influences was the nature of competition in the industry, therefore I formulated the model accordingly.
  - The circle of examined organisational factors – considering data availability – was somewhat reduced.

- The measurement of enterprise performance was completely reformulated. I placed the enterprises in the dimensions „Growth" and „Profitability" based on multiannual balance and earnings data.
- Furthermore, the original model only assessed connection between entrepreneurial orientation and performance. Although this analysis considered environmental and organisational influencing factors but did not examine if these factors separately affect attitude or efficiency. In my model I separately assessed these factors and subsequently analysed their aggregate impact on efficiency

- **I revealed the components of rivalling and cooperative attitude for the domestic SMEs in the sample based on the results of the survey concluded.** According to the respondent executives rival spirit is a positive attitude towards rivalisation where victory is the goal but this competition for innovation, risk taking and rejuvenation is considered as a challenge and possibility. The cooperative attitude consists of a sense of compromise where the leader can accept a short term unfavourable position in order to realise long term benefits. In this case, the manager strives to achieve a mutually beneficial, fair and descent solution.

- **As a result of the research I have identified five groups of executives based on rival spirit and cooperativity.**
The statements on attitude in the questionnaire providing the basis for my research allowed for the formulation (both with hierarchical cluster analysis and principal component analysis) of five categories and could be distinguished in two further directions. Correcting with principal component weights I used these to form the „Rival spirit" and the „Cooperativity" indices. I placed the five leadership attitudes in these dimensions. I used the notation „Reserved" (12.4%) for those managers who were withdrawn from both competition and cooperation. The next group showing only slight cooperation and even less intense competition was called golden mean („Mediocritas", 20.7%). Pure competitors were denoted with „Rivalling" (11.8%) while purely cooperating ones were denoted „Cooperatives" (21.3%). Around third of the executives (33.7%) turned out to be „Coopetitives" as they simultaneously showed competitive and cooperative behaviour towards other companies.

- **I came to the conclusion that leadership attitude has a weak but verifiable impact on efficiency in the responding companies.**
I confirmed the connection using multiple methods between data provided by the respondents and balance and earning figures of the enterprises (taking into consideration the respondent's time period spent at the company as an executive). The contribution of leadership attitude to efficiency (according to the CRT decision tree) is 2.3-2.6%, further analysis revealed that not cooperativity but rival spirit played an important role in this.

4. Conclusions, recommendations

In my research I aimed to reveal the context of corporate efficiency and leadership attitude. As a first step I analysed leadership attitude.

According to attitude I identified five groups of executives. The formulated clusters were denoted as „Coopetitive", „Cooperative", „Rivalling", „Mediocritas" and „Reserved. The results showed the corporate leaders to be simultaneously cooperating and competing (33.7%). These leaders with „**Coopetitive**" attitude consider competition as coercion but they are also driven by the striving for victory, perhaps this is why they look for cooperation with rivals. From questions on actual behaviour (innovations, monitoring of rivals, number of actual cooperations) it was further revealed that they performed the best both in cooperation and in competition. This cluster was followed in size by the „Cooperative" cluster (21.3%). The **„Cooperative"** attitude turned out to consist of a willingness to cooperate where the executive can accept a momentarily disadvantageous situation for the sake of long term productive cooperation. Managers with cooperative attitude strive to offer mutually benign deals, try to be fair and descent. Considering the elements in the cluster the golden mean is also in the middle (20.7%), the managers with the attitude **„Mediocritas"** show moderate inclination both towards competition and cooperation. They are the most risk averting and they are emphasising competition as coercion the most. Concerning the **„Reserved"** cluster (12.4%) based on the data it can be stated that they are focusing on a narrow market segment or buyer group where they reported no competition, probably them being the sole suppliers of the product. This explains why cooperation or rivalling has no relevance for them and thus they don't assign any importance to these attitudes. The smallest group is the cluster of **„Rivalling"** (11.9%) leaders, the rival spirit is considered as a positive attitude according to the results. The rivalling leaders try to achieve leading position but this rivalisation (rejuvenation, innovation and risk taking) is considered as a challenge and possibility.

Based on the data it can be stated that men are likely to be in the „Coopetitive" and „Rivalling" clusters while women can be found in the „Reserved", „Mediocritas" and „Cooperating" clusters. It was furthermore outlined that higher academic degree led to a more rivalling attitude. Considering the nature of competition a driving force towards rivalisation was a higher chance of success and a lower destructivity of competition while stronger competition and a higher number of direct opponents pushed towards a cooperative attitude.

After analysing the attitude of the corporate executives the analysis of corporate balance data followed, headcount, sales income, pre-, and post-tax earnings and total balance sheet data was available. Using these data I calculated the following additional indicators: return on assets (ROA) and return on sales (ROS). Using a ten years dataset I grouped the enterprises into four groups by two dimensions, average rate of increase in „Growth" (headcount, sales income, and total balance) and „Profitability" (ROA, ROS). Those showing positive average

growth for both dimensions became „**Competitives**", those who only showed positive rates for „**Growth**" became „**Showing growth**", those who were good in profitability became „**Profitable"**, while those who were negative in both dimensions became „**Not competitives**". Approximately one quarter of the enterprises fell into each category.

The data shows that the profitability of the enterprise is connected with location, size, life cycle position and porterian strategy. A weak connection is shown between the Western or central regional location and increased profitability. The average growth of profitability is higher for 10-19 employee firms than for 20-249 personnel enterprises. The cost leading porterian strategy allowed for the successful restriction of costs allowing for the followers of this strategy to accomplish a higher growth rate in the „Profitability" indicator. The „Growth" indicator showed correlation with the age of the enterprise, as with age the growth rate slows down due to the natural saturation.

Finally I assessed the connection between attitude and efficiency of the enterprise for which I had to filter data to use only those where the actual leader was already in function in order to assess the results of his activity.

Based on the examinations the companies with managers withdrawing both from cooperation and competition seem to decline, showing negative results in both „Growth" and „Profitability". A weak connection thus can be made between the **„Reserved"** type leaders and the **„Not competitive"** type enterprises. Those choosing to be a golden mean and slightly more cooperative than competitive perform well regarding profitability. The enterprises of **„Mediocritas"** leaders **are** likely to be **„Profitable"**. The enterprises of leaders emphasising both cooperation and rivalry did not perform well in **„Profitability"**. The **„Coopetitives"** therefore represented the highest share among those **„Showing growth"**. A weak tendency showed the largest share of enterprises of rivalling managers in the most profitable firms, that is **„Rivalling"** managers firms were typically **„Competitive".** These results due to their weak explanatory strength could be later controlled by an additional research.

Further analysis highlighted that the age of the enterprise is the most influencing factor for the classification into efficiency categories. This can be accrued to the previously mentioned fact that with time market gets saturated by the company's product. Besides intensity of competition and location of the enterprise the impact of the five attitude types presented itself. The attitude, although weakly (2.3-2-6%) but influenced the efficiency of the enterprise. Additional analysis showed that the stronger impact is exerted by the competitive attitude in the sense that more rivalling leaders have more competitive enterprises.

Based on literature findings it could be expected that „Coopetitive" attitude leaders have the most efficient, „Competitive" enterprises but this was not confirmed for the companies examined in my research. The reason for this can be that if coopetitions are made with domestic competitors then this increases international rather than domestic strength and competitivity.

For exploring another possible explanation the dimensions of efficiency were examined. Although the enterprises of „Coopetitive" leaders performed well in the dimensions of „Growth" but worse in the aspect of „Profitability". This supports findings in literature which state that without trust it is costly to develop cooperation and this hinders profitability. This is typical for Hungarian enterprises. Due to the lack of trust and the aversion of risk they are not cooperative. They are afraid of an opportunistic, free rider partner which can be traced back to cultural problems. This hinders cooperation which could reduce costs, improve efficiency and thus, earnings. Good examples for this are Scandinavian countries which are on the top of competitivity lists thanks to mutual trust and resulting savings. The lack of confidence is therefore constraining development and improvement of efficiency and for SMEs the cause of lack of competitiveness. An additional factor, risk aversion can also play a role in this, as risk aversion leaders are willing to pay for reducing risks. The formation of these attitudes can be in connection with historical, economical and societal uncertainties. At the same time it is promising that the effectiveness of the Hungarian regulation is improving according to international data, thus improving predictability and a quarter of a century after the transition mistrust seem to diminish and long term vision seems to rise.

The success of companies adhering to international trends in implementing a coopetitive strategy is not shown yet in profitability due to the initial time demand and costs of formulating cooperations. The steps towards cooperative and coopetitive directions and payback from cooperations with rivals can be expected on the longer run.

Chance for coopetitions is only present if a higher profit, sales performance or in other words higher competitivity can be expected compared to pure rivalisation. This theory was justified internationally but did not yet surface in domestic level where several arguments are listed why they do not cooperate with their competitors. In pilot studies for example the view that indecent behaviour is more effective than descent was shared. In Hungary in the last quarter-century the economic environment changed multiple times (switch to a market economy, globalisation, regionalisation, EU requirements, and economic crisis) making adaptation of behaviour to market economy difficult. In this aspect the shift towards healthy rivalisation and cooperation can be considered a very positive attainment.

I think that leaders of Hungarian enterprises are subjectively rational, in that they consider perceived risks and expected results. Practically they formulate their standing points in the domestic relations. A big role is played by the unfavourable impacts from the institutional and social environment. To annihilate these, a top-down and a bottom-up construction process has to be started. In the development of the desired attitude economical and legal stability could play a beneficial role and the good example of the intellectual and political leaders. A bottom-up beneficial impact could be preparation through learning and education. The practice of developed countries already confirmed that capital invested in developing trust and confidence has multiple scales of return. In the Hungarian education attitude is the

last thing mentioned however. The public education changed in many aspects putting obstacles in the way of disseminating positive and useful international practices. It could be well worth changing this and giving the attitudes necessary for taking leader positions to those who successfully conclude their university degree.

Due to objective constraints, the research did not examine all aspects. For understanding results more precisely the analysis could be extended with a confidence-research. To understand opinions more thoroughly and to reveal casuality relationships a qualitative survey could be undertaken among Hungarian SME executives. It would be advisable to compare SME and large enterprises attitudes, and to make comparisons with neighbouring country (Czech Republic, Slovakia, and Poland) managers. I plan to map a full scale coopetitive network (e.g. in medical instrument industry as their numbers are not too high).

5. Scientific publications in the field of the dissertation

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