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**An empirical analysis of the value creation of Hungarian small and medium  
size businesses**

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**Abstract.**

Value creation is a frequently investigated issue of the strategic management and entrepreneurship literature. Unfortunately, we know little about the value creation of the small businesses mainly because of the missing stock market and accounting data. The present study develops value creation measures and a model of value creation that can be more generally used than previous models. With the use of cluster analysis technique, the authors tried to classify 86 Hungarian small businesses mainly from one region of Hungary. The empirical investigation prevailed that they are high differences amongst the 5 clusters in terms of value creation measures of employment, sales and equity growth. However, the identification of the sources of value creation has proved to be less successful. Neither entrepreneurship proxies like innovation, market expansion, investment nor personal attributes could explain the differences in value creation.

### *Value creation: sources, measure and perception*

The term of “value creation” goes back at least to Porter who used the value chain analysis in order to analyze the sources of value. As a measurement of value, Porter identified total revenue but he added that for profitability the values should exceed the costs of product (Porter 1985). The discovery of the connection between value creation and entrepreneurship goes back even further to Schumpeter, who described the notion of “creative destruction” (Schumpeter 1934). In the sense of Schumpeter, economic development can be viewed as a measure of value creation and innovation as a source of it. Since innovative activity is the heart of entrepreneurship, the direct connection between value creation and entrepreneurship is straightforward.

If we have a look at the development of the value creation research in the literature, three main, most of the times interrelated research topics are arising:

1. the factors (sources) of value creation (who and/or what creates the value?)
2. the measure of value creation (what is value?)
3. the perception of value creation (who gets it?)

By analyzing the source of value creation, the resource-based theory views the firm as a bundle of resources and capabilities. These resources and capabilities are different even within the industries. Moreover, specialization makes them imperfectly substitutable and causes difficulties to imitate (Amit and Zott 2001, Bowman and Ambrosini 2000). Not the resources itself but the unique use leads to revenue increase relative to costs and creates value (Barney 1997). The building and acquiring of valuable resources over time is a central theme of the strategic management literature. Human resources (Becker et al 1997), different innovations and R&D (Deeds 2001, Miller and Floricel 2001, Teece 1998), business networks (Holm and Erikson 1999, Tsai and Ghoshal 1998, Wedin 2003) have been mostly analyzed. Recently, investigation of the value creation of the internet related businesses are in the center of interest (Amit and Zott 2001).

Since Porter value chain analysis, the effect of business strategy on value creation has also been widely investigated: Kaplan and Norton’s balanced scorecard method has been probably the most popular development (Kaplan and Norton 2004). Moran and Ghoshal (1996) claims that value creation “lies at the heart of effective firm strategies” (pp. 45). Several aspects of strategy formulation, like growth (Zook et al 2000), mergers and acquisitions (Kohers and Kohers 2000, Seth 1990), diversification (Berger and Ofek 1995), innovation (Kim and Mauborgne 1999, Miller and Floricel 2001) have been researched and connected to value creation.

The other set of issues associated with value creation is the measure of it. This issue is closely associated with the third issue, i.e. who perceives the value? Most of the times the shareholders wealth maximization is considered to be the most important aim of the businesses (Bughin and Copeland 1997). The performance of the listed firms can be judged by the stock prices (Jensen and Murphy 1990). However, over years Stern Stewart economic value added (EVA) and its development market value added (MVA) or refined economic value added (REVA) emerged as a dominant and superior measure of value creation (Bacidore et al 1997, Dodd 1999, Kalafut and Low 2001, Ramenzani et al 2002, Vozikis et al 2000). Both methods rely mainly on the firm’s accounting data. EVA is defined as the surplus value of the investment, and calculated as the difference between the operating profit and cost

of capital, or the difference between the return on investment and cost of capital. The cost of capital can be calculated by the multiplication of the average cost of capital and the book value of net capital. EVA can be increased by three ways: (1) the increase of cash flow with the same base of capital, (2) the additional invested capital improves the returns more than the rise of the costs (3) the liquidation of inefficient capital (Dodd and Johns 1999).

The major criticism of EVA lies on the historical, ex post, nature of accounting data and the real (market) value of the employed capital. The refined EVA (MVA) can be defined as the value added to shareholders' investment. It is the difference between the market value and the book value of the invested capital. If MVA is positive it means that the business is creating value for its owners, a negative value means value distraction (Spivey and McMillan 2002). The shortcoming of MVA is the lack of market value data of the businesses that are not publicly traded (Spivey and McMillan 2002). Instead of relying the mainly input based accounting data, Vozikis et al. (1999) suggest to use output based (cash flow) data to measure not the level but the additional value creation.

The incorporation of EVA or MVA into the company's performance measurement system raises some doubts. Ramenzani et al (2002) questions that the value based performance measures truly corresponds to the shareholders interest, while Dodd and Johns (1999) suggests that EVA adoption can lead to less attention to quality and customer needs. Moran and Ghoshal (1996) argues that not only the creation but also the realization of the value is important. For this value realization the product or service should be exchanged. In this process the capture of the value from customers is the main concern, states Bowman and Ambrosini (2000). Besides shareholders and customers, other stakeholders are also affected by value creation. Successful firm are more productive and create higher shareholder value and grow employment faster than other companies, found Bughin and Copeland (1997) in an empirical study.

Considering only economic value creation can be misleading in valuing the business. Social entrepreneurs, who consider social improvement, public effects and the benefits to other people who are not able to pay for the product or service, play an important role in the society and can create high social value most of the times at the cost of private value (Dees 2001). Unfortunately, there has been no study to measure the social, sometimes external, effects of the businesses.

### ***Value creation, entrepreneurship and SMEs: The model***

While it has been written a lot about the connection between entrepreneurship and value creation, we could not find any studies to address the value creation of the SMEs. In the sense of Schumpeter (1934), entrepreneurship is value creation, and the notion that entrepreneurs create value is a widely hold view (Venkataraman, Frijs at al 2002, Dejardin 2000, Carree and Thurik 2002, Wennekers and Thurik 1999). The firm that is more entrepreneurial creates more value than its less entrepreneurial counterpart, holds Vozikis et al (1999).

The question of the measure of the effect of entrepreneurship on value creation goes back to the question: how do we define entrepreneurship? There is an agreement that no general theory of entrepreneurship exist, presently. Wennekers and Thurik (1999) claim that "entrepreneurship is an ill-defined, at best multidimensional, concept" (pp. 29).

The creation of new business (Gartner 1985) is a tangible, easy to operationalised definition that is widely used in empirical studies. The Global Entrepreneurship Monitor (GEM) also relies on this approach by considering new (less than 42 month old) and nascent (an attempt to make a business operational) businesses entrepreneurial independently whether it is within the framework of already existing or new business (Reynolds et al 2001). These theories are consistent with Schumpeter's notion on entrepreneurship, i.e. the creation of something new (Schumpeter 1934). An inherent attribute entrepreneurship is the associated risk and uncertainty (Knight 1921).

The recognition and pursuit of opportunity is another major focus on entrepreneurship research (Kirzner 1979, Timmons 1999). The role of the entrepreneurial functions is emphasized by Stevenson et al (1989), who distinguishes between entrepreneurial and managerial roles. The dynamic and holistic process of entrepreneurial development over time and influenced by various interacting variables is a view of Bygrave and Hofer (1991).

The entrepreneurial trait theory examines the entrepreneur rather than the entrepreneurial process. What are the major characteristics of the successful entrepreneurs why do they start a business or behave, can entrepreneurship be learnt – these are the major questions of this theory (McClelland 1961, Herbert and Link 1989, Virtanen 1997, Wennekers and Thurik 1999). Unfortunately, the trait theory has been unable to provide a distinctive set of entrepreneurial attributes that could have been associated with ultimate successes or failures.

Several theoretical approaches have dealt with the aims and goals of entrepreneur or entrepreneurship, that leads back to a previously touched question: how to measure value creation. The value added feature of the entrepreneurial business through growth and profit is a central tenet of Gartner (Virtanen 1997). The connection between economic growth and entrepreneurship is an important topic of Wennekers and Thurik (1999) and Acs et al (2003). Their main research effort focus on exploring the intermediate factors that link entrepreneurship and economic growth, however they mainly examine the macro rather than the micro effects. The positive effect of entrepreneurial activity on employment is often analyzed since Drucker's seminal work (Drucker 1985).

Several measures of the micro-economic (firm level) value creation are given by Spivey and McMillan (2002) that include profitability measures (like earning per share, net profit margin and EVA), cash-flow measures and growth measures (earning growth, sales growth). Interestingly, no one considers employment growth as a measure of value creation. For our future purpose the micro-economic, firm level value creation approach provides the applicable framework.

It is commonly hold that entrepreneurship and small business are connected but not the same idea: entrepreneurship is a behavioral phenomena that can be found both in small and large businesses. Most small businesses are not entrepreneurial by any sense, i.e. they are not innovative, bears no uncertainty, and have no effect on the market, holds the GEM research (Reynolds et al 2004). Therefore, when we want to examine the effect of entrepreneurship in the SME sector, the distinction of entrepreneurial and non-entrepreneurial SMEs is necessary.

However, the measure of the value creation in the SME sector is very difficult even if we could define entrepreneurship. Most of the literature, covered in the first part of the paper, under the title small business mean small publicly traded business. The reason is purely practical: when the business goes to the stock market, a market related value of the business is

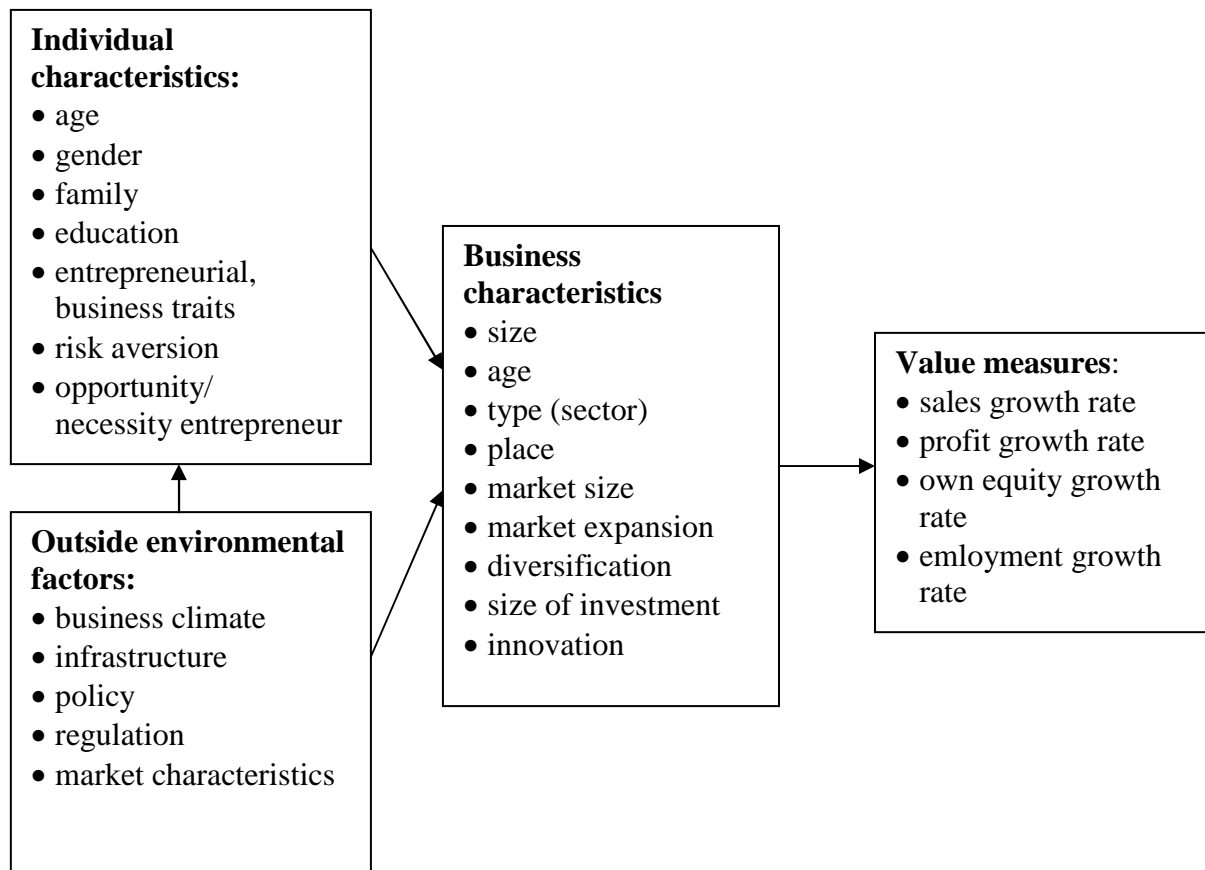
given. But what can we say about businesses that never go to the stock market? The real market value of these businesses is not known, and the different estimation techniques provide very different results. Moreover, most small businesses depend mainly on one key-person, the owner-manager. The sale of the business could result a major loss because of the disappearance of the owner's personal connections, networks, local management techniques and tacit knowledge. No estimation technique exists that can measure some value added feature of the small firms, for example independence (being someone's own boss) can be an important reason of the establishment of the business (Glancey 1998). Basically if we access only on existing accounting data it will provide questionable results in large extent. Small businesses are more engaged in "creating book-keeping" techniques than large publicly owned firms: neither sales nor profit or cost data are reliable.

What can be a useful approach to measure value creation in the case of small business?

First, we have to identify the measure value creation. Our sources (see the description later) make possible to use sales, profit and own equity data. In order to avoid the unreliability of data, we calculated the average yearly growth rates of sales (customer side), profit and own equity (ownership side) over the years 2000-2003. If we assume that the inconsistency of the data does not change too much from year to year, then a relative reliable method of value creation can be calculated. Of course, in this case, we can measure the *additional* and not the *level* of value creation. Moreover, we believe that the change of employment (societal side) can also be used as a measure of value creation: if the business increases the number of employees that means the decline of unemployment (positive country side or regional effect) and the increase of income and wealth of the new employee (individual effect).

Second, the sources of value creation should be identified. We divide the potential variables into two groups: business variables (age, size, place and type of the business, diversification, innovation, investment, market size etc.) and individual variables (family business, education level and gender and age of the main owner, risk aversion, opportunity/necessity entrepreneur etc.). Among these variables there are some "entrepreneurial attributes": innovation, size of investment, market expansion, risk aversion. Of course, there are some outside events and factors (business climate, policy, regulation, market characteristics etc.) do have an effect of value creation. In the following, we do not want to deal with the effect of outside factors, but keep them in the model. Figure 1 presents the model of value creation.

**Figure 1: The model of values creation**



***Value creation in the Hungarian SME business sector: An empirical analysis***

Our original data set consists of 131 data points. The questionnaire aimed to collect small firm data, but some individual characteristics of the respondents were also noticed.<sup>1</sup> The respondents were the main owners of the business who also had a position in the management, most cases they were the executive managers. The time of data collection was between March and May 2004, and the harmonization of the data set as well as the collection of the missing data took place in June 2004. In order to avoid regional differences, only South Danubian business remained in the data set, that represented 5 counties: Baranya, Tolna, Somogy, Fejér, and Zala. After dropping out “suspicious” firms, potentially incorrect and missing data points, 86 businesses constituted our sample. Since the research was experimental, it lacked the representativeness of the data set.

Because the original aim of the research was not the measure of value creation, but to identify business growth and development, not all the necessary variables, described in Figure 1 were available. We had no data on the business owner’s education level, entrepreneurial and business traits. The level of risk aversion could be measured only by some proxy variables, like the size of capital, the willingness to growth and opportunity/necessity variables. Unfortunately, non of these risk measures worked well, therefore we dropped them out. All the business characteristics variables were available, but many profit data points were missing. Moreover, profit growth rates proved to show so high variation, so we decided not to

<sup>1</sup> The research aimed to investigate value creation in the SME sector, however we did not cancel the 3 large firms that marginally exceeded the border limits.

include in the variables. Therefore customer's value creation were measured by the change of sales growth rate (real), the owner's value creation by the change of own equity (real), and the societal value creation by the change of the employment rate averaging yearly growth rates over the time period 2000-2003.<sup>2</sup>

Our original idea was to use ordinary least squares (OLS) and cluster analysis techniques to identify the sources of value creation and to classify businesses.<sup>3</sup> We also tried to condense the three value creation variables into one factor and use it as a dependent variable. Unfortunately, the results were very disappointing with large number of insignificant variables, low adjusted R<sup>2</sup> and associated low F values. The clusters proved to be very uneven by grouping most of the firms into one cluster. In order to get some acceptable result, we decided to create new discrete variables by pre-classifying the data. For example, we created five groups in terms of employment growth rate by giving 1 to negative growth employment firms, 2 for 0 growth rate, 3 for 0,1-10 percent growth rate, 4 for 10,1-20 growth rate and 5 for 20 and above growth rates. The full list of all of the applied variables including the classification can be found in Appendix 1.

After the creation of the new variables we tried to use the OLS as well as the cluster analysis techniques again. The OLS result proved to be unsatisfactory, but the cluster analysis was more effective. However, the SPSS program noted small differences amongst the clusters that was definitely a warning sign in terms of the validity of the investigation. The best results of the cluster analysis can be found in Table 1.

**Table 1: Value creation and influential variables clusters in Hungarian SMEs**

Variables	Clusters					Average
	1	2	3	4	5	
	"established"	"expansive"	"losers"	"ambitious"	"laggards"	
EMPLOYCH	2,38	3,00	2,24	3,07	2,25	2,48
SALESCH	3,0	6,0	2,8	5,6	3,1	3,83
EQUITYCH	4,8	6,3	2,7	2,0	3,0	3,60
SECTOR	2,9	3,5	4,4	3,1	2,0	3,41
DIVERSIF	1,8	1,7	2,1	2,0	1,9	1,94
MERKETEXP	5,6	1,9	1,9	4,0	1,8	2,95
INVESTMENT	2,81	2,00	1,14	1,14	2,08	1,76
SIZE	2,81	2,77	1,66	1,86	4,75	2,53 (18,64 employee)
AGEBUS	2,75	1,92	2,10	1,93	2,75	2,28 (9,79year)
INNOV	,4	,3	,2	,4	,3	0,30
FAMILY	,7	,5	,4	,3	,8	0,49
AGEENTR	5,31	3,77	4,83	3,86	4,67	4,52 (45,23 year)
GENDER	1,9	1,6	1,4	1,9	1,8	1,65
Number of cases	16	13	29	14	12	84

The cluster analysis makes it possible to classify firms regarding different measures and factors of value creation. The most populated factor is number three. These 29 businesses (around one-third of the sample) has well below average in all measures of value creation, growth rates in employment (EMPLOYCH), sales (SALESCH) and equity (EQUITYCH). We call them the "losers". It means, that most of these businesses did not increase employment, rather fired then hired, real sales and real equity growth were close to zero,

<sup>2</sup> The 2003 present value of the sales and owner's equity was calculated and used for the real growth rate data points in the case of sales and owner's equity.

<sup>3</sup> For the analysis, the SPSS software was used.

sometimes negative. In terms of total additional value creation these firms rather decreased than increased value. By examining the firm characteristics, it can be seen that the typical age (AGEBUS) of these businesses was below average (7,5 years). They could be found mainly in the retailing and service sectors (SECTOR). In spite of small size (SIZE) they diversified the most (DIVERSIF), but had most of their customers from one place (MARKETEXP), probably from towns. The owners did not develop their business: they spent around 1 million HUF for investment in 2000-2003 (INVESTMENT), and the innovation activity (INNOV) was the lowest in all clusters. The percentage of family (FAMILY) and women owned businesses (GENDER) were the highest in this cluster. The owners (AGEENTR) were typically older than the average.

Another 12 businesses in cluster 5 were the “laggards”, with better, but below average value creation measures than the previous group. These are typically large, old agricultural or manufacturing firms working on the local market, but spending more than the average for investment (more than 10 million HUF in 2000-2003). Their innovation activity was minimal, that corresponded to the business sector. Most of the businesses were collectively owned mainly by males. The percentage of family firms were the lowest in all clusters.

The second largest group with 16 businesses is cluster 1, the “established” small firms (20-49 employee) in the manufacturing and construction sectors, not diversifying but rather specializing to a certain product. They had the largest market, delivering countryside, and many of them exported to other countries. They spent the most for investment and innovation. However, the value creation performances were not the best: real sales just grew by about 3 percent yearly and the employment increase was also modest, that could have been associated with other external effects like highly competitive environment. Relative the best performance was the increase of real own equity that exceeded 20 percent yearly, on the average. These old male entrepreneurs and family businesses focused on ownership value creation.

The “ambitious” businesses performance was much better than the previous groups with one exception: equity increase. However, they achieved the best result in terms of employment: the average increase of the number of employees was more than 10 percent. The expansion of real sales exceeded 20 percent, so customers value creation was very high. The modest change of the own equity might imply under-capitalization problems that were also associated with very low level of investment, but higher innovation activity. The typical business was in the construction and service sectors with higher than average diversified markets. They delivered on the regional market. These businesses were amongst the youngest, they were run typically by young - younger than 40 years – males. The share of the family firms was the highest in this cluster, contradicting to the belief on the low growing potential of family owned firms.

The best businesses in terms of value creation can be found in cluster 2. The yearly growth of real sales and equity exceeded 20, sometimes 40 percent. The growth rate of employment was also impressive, more than 10 percent per year that was a little below cluster 4 result. These businesses were focused both in diversification and market: they typically specialized rather than diversified and produced on the local market, within one town. These 13 firms were the youngest (typically 6-9 year old), but larger in size than the previous group (typically having 11-50 employees). The share of family businesses was around 50 percent and almost half of them were rather female than male owned businesses. By surprise, the number of firms engaging in innovation was about the average (4 businesses), but the investment activity



proved to be better: these firms spent around 1-10 million HUF for investment purposes in 2000-2003. Almost all investment aimed to expand capacity.

By examining individually the firms in cluster 2, a diverse picture emerged: these businesses could be found in each sector, 4 in the retailing, 3 in services, 2 in construction and agriculture and 1 in manufacturing. They tended to be younger but 2 firms' age exceeded 10 years. The number of employees were the same in 5 businesses and one firm decreased the number of employees dramatically, from 31 to 11. Their investment was relatively high but 3 firms had 0 investment in 2000-2003. Moreover, 4 business owners in this group were disappointed with the performance of the firm! (?) The reasons of heterogeneity could be multidimensional and might be associated with the neglected or individual characteristics and variables that left outside of the model.

The result of the cluster analysis was further investigated by discriminant analysis. It cleared up that about the same result could have been achieved by using only 5 variables: the SALESCH, EQUITYCH, DIVERZIF, MARKETEXP, and SIZE. These 5 variables explained 96,5 percent of the variation among the clusters. The predicted group membership with the use of these 5 variables was 94 percent the same as in the case of the previous model.<sup>4</sup>

What can we say about the role of entrepreneurship in the Hungarian SME sector? Based on the value creation performance of the businesses, group 2 and 4 could be viewed as entrepreneurial, with impressive growth rates. Unfortunately, innovation has a close to zero correlation with any value creation variables. Market expansion, that could also be considered as innovation, was the highest in the solidly performed cluster 1, and was very low in the "expansive" group. The high level of investment might also mean higher risk tolerance and some kind of innovation. However, investment was the highest in group 1 with modest performances and group 5 with lower than average value creation indicators.

Summarizing the examination of the effect of entrepreneurship on value creation we cannot say strong statement. By examining the worst performed businesses in group 3, it can be seen that low level of innovation and investment, the production for only local market *at the same time* could mean a low level of value creation. But comparing group 3 to the best performed group 2, there is only one real difference in the "entrepreneurial" variable data: the level of investment. The age and the size of the business and the age of entrepreneur prevails much higher differences between the best and the worst group. Therefore, some firm or personal attributes like young businesses and growth oriented, committed young business owners might have more influence on value creation than the present model predicts, but this is only a hypothesis.

### ***Summary and conclusion***

Up to presently, the examination of value creation has been focused on large businesses because of the limited availability of stock market and accounting data. We know very little about the real market value of small businesses. Moreover, small business owners have more incentive and possibility to use creating accounting techniques that leads to unreliable measures of value creation. In the present paper, we have tried to develop a model of value creation that could also be used in the smaller firm size sector. The suggested measures of value creation, the change real growth of sales (customers' value creation), the change real

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<sup>4</sup> The results of the discriminant analysis can be received from the authors on request.

growth of equity (owners' value creation) and the change of the number of employees (societal value creation) can quantify only the change and not the level of value creation. However, focusing on future development the additional value creation is at least as important than the level of that one.

In the model, developed in the paper, we assumed that additional value creation is influenced by firm and individual characteristics, and variables. The potential effects of environmental factors were noted but left out of the model. In order to test empirically the model, different estimation techniques have been tried, and finally the cluster analysis proved to be the most valuable. The created 5 clusters show significant differences amongst the businesses in terms of value creation measures. Around one third of the 86 South Danubian Hungarian businesses rather lose than create additional values. Another 12 relatively large, old firms have also below average performance, with basically zero growth rates in the 2000-2003 time period. The performance of the "established" businesses group is modest: they have small (0-5 percent) positive growth rate in real sales, around 5-10 percent growth rate in equity and minimum increase in employment. The "ambitious" group performance is impressive in terms of employment and sales growth but lacks to increase the owners' equity. The "expansive" cluster club has the best achievement in sales and equity growth rates, and the second best in terms of employment growth.

When we examined the influential factors of value creation, it cleared up, that only 3 variables, the size of the business, the level of market expansion and the type of industry branch explained most of the variations. However, some other attributes like the age of the business and entrepreneur variables demonstrated alterations: the best performing businesses and business owners were the youngest, and the solid performance of the "established" group might be associated with the high age and other personal characteristics of the business owner. Gender does not look to be a major influential factor: the share of women owners is the largest in the "losers" group, but this is probably due to the larger share of retail and service businesses compared to other groups.

Trying to identify the connection between entrepreneurial factors and additional value creation, has been less successful. Besides that high additional value creation can be viewed entrepreneurial, we can say very little. The product and technology innovation variable was insignificant in correlation of any variables of value creation. Another "entrepreneurial" variable, the market expansion, was more applicable: wider geographical extension meant more value creation with one serious difference, i.e. the best performing group produced basically to the same market as the worst cluster. The investment variable was also questionable: the level of investment proved to be about the same in the worst and the second best performing groups. A possible reason of the insignificance of innovation variables can be the lagging influence: present innovation can explain next period performance. Unfortunately, we do not have reliable data about the previous innovation performance of the firms. The case-by-case examination of the two best performing group prevailed that these businesses were very different that might mean many different ways and factors of success. High additional value creation can be influenced by many variables, business and personal attributes that are difficult to identify and vary from business to business. That is definitely not good news to policy makers who want to pick up potential winners.

The results of this experimental research call for further investigation: the increase of data set and data points looks a good starting point. With more proxies of value creation, for example

cash flow and profit, more innovation, personal attributes and longer time data the examination could be more conclusive.

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## Appendix 1

### The list of variables

<b>Name of variable</b>	<b>Description</b>	<b>Note</b>
EMPLOYCH	average change of employment 2000-2003	Group ranges are in Appendix 2
SALESCH	Average real rate change of sales 2000-2003	Group ranges are in Appendix 2
EQUITYCH	Average real rate change of equity 2000-2003	Group ranges are in Appendix 2
SECTOR	The type of the sector of business	Group ranges are in Appendix 2
DIVERSIF	The number of divisions of the business, based on 4 digit industry stratification (branches)	
MERKETEXP	The geographic expansion of sales	1: one place one plant, 2: one place more plants, 3: county wide, 4: region wide 5: country wide, 6: foreign export
INVESTMENT	The 2003 present value of investment 2000-2003	Group ranges are in Appendix 2
SIZE	The size of business based on the 2003 number of employees	Group ranges are in Appendix 2
AGEBUS	The age of business in 2003	Group ranges are in Appendix 2
INNOV	The introduction of product and technological innovation in 2000-2003	0: no innovation, 1: either product or technological innovation, 2: both product and technology innovation
FAMILY	Family owned business	0: owned by only family members 1: not only family owned
AGEENTR	The age of the entrepreneur in 2003	Group ranges are in Appendix 2
GENDER	Gender of the main owner	1: female, 2: male

## Appendix 2 The classification of selected variables

SALESCH, EQUITYCH		EMPLOYCH		SIZE		AGE		INVESTMENT		AGEENT		SECTOR	
Average real growth rate of sales and equity 2000-2003 (%)	Value	Average growth rate of number of Employees 2000-2003 (%)	Value	Number of employees 2003	Value	Age of business 2003 (year)	Value	Real value of investment in million HUF 2000-2003	Value	Age of the owner in years in 2003	Value	The type business sector	Value
Below -10	1	Below 0	1	0-1	1	- 5	1	0	0	18-30	1	Agriculture	1
0- (-10)	2	0	2	2-9	2	6-9	2	0,1- 1	1	31-35	2	Manufacturing	2
+0 - 5	3	0,1-10	3	10-19	3	10-14	3	1,01-10	2	36-40	3	Construction	3
5,01-10	4	10,1-20	4	20-49	4	15 -	4	10,1-50	3	41-45	4	Retail	4
10,01-20	5	20,1 -	5	50-99	5			50,1	4	46-50	5	Services	5
20,01-40	6			100-249	6					51-60	6		
40,1 -	7			250	7					60-	7		