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HOW COMPETITIVE ADVANTAGE INFLUENCES FIRM PERFORMANCE: THE CASE OF SLOVENIAN FIRMS

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Abstract: In the paper we seek to identify the basic forms of competitive advantage of Slovenian firms at the end of the transition process and to analyse the link between these forms of competitive advantage and firm performance. The results show that Slovenian firms try to build their competitive advantage on differentiation more than on lower price (costs) although there is no evidence that firms with a competitive advantage in differentiation are more successful than those with a competitive advantage in lower price (cost). We can, however, conclude that firms with a simultaneous competitive advantage in lower price and differentiation are more successful than firms with a competitive advantage in just one of the two forms. A conclusion can also be drawn that a stronger competitive advantage in any of the discussed forms is reflected in greater firm performance.

Key words: Competitive advantage; Differentiation; Cost efficiency; Performance, Slovenia

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JEL classification: M10; M13

1. INTRODUCTION

Firms whose primary strategic goal is long-term progress and development must build some kind of competitive advantage. Although the positive link between a competitive advantage and firm performance is often too easily taken for granted (some authors even treat both constructs as synonyms), it must be noted that competitive advantage and superior performance are two different things. Given the great importance of the topic it is necessary that both theory and practice correctly understand the basic concepts

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related to a firm's competitiveness. The purpose of this paper is to identify the main forms (types) of competitive advantage of Slovenian firms at the end of the transition process and, based on that, to analyse the link between these forms of competitive advantage and firm performance. After a brief review of the relevant theory on a firm's competitive advantage and its effects on performance, the paper mainly involves a presentation of the empirical findings of a study of 225 Slovenian firms. By comparing the empirical evidence with the theoretical findings in the literature, we believe some new insights can be offered to scholars and researchers in the field of competitiveness.

2. FORMS OF COMPETITIVE ADVANTAGE AND FIRM PERFORMANCE

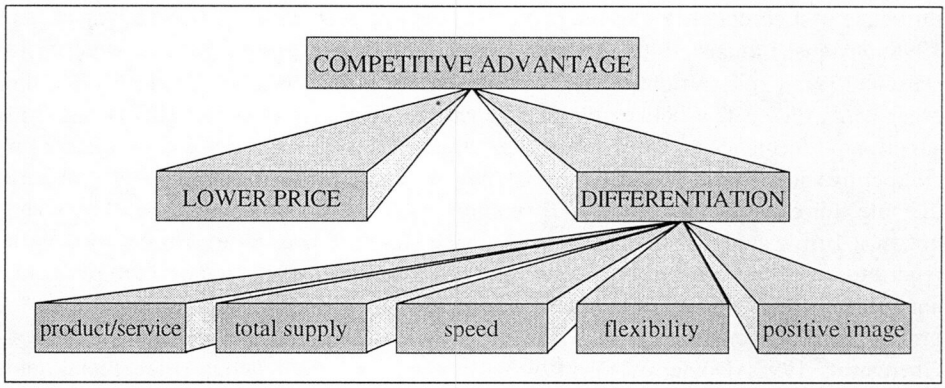
A competitive advantage can be defined as a unique position[1] a firm develops in comparison with its competitors. Outward evidence of a competitive advantage is a position of superiority in an industry or market (Bamberger, 1989), where the superiority depends on how customers perceive it. Since customers make a firm's operations and progress possible, the whole idea of competitive advantage should in fact be analysed from their perspective. For example, a firm can produce superior products but, so long as the customers do not perceive them as superior, the firm is unlikely to gain a competitive advantage and outperform its competitors. The above understanding of competitive advantage brings us to the conclusion that firms have to compete on superior customer value delivery. They can offer superior value to customers by offering similar products and services as the competitors at a reduced price or by differentiating themselves from the competitors (i.e. offering something the competitors cannot). Two main forms of competitive advantage are therefore lower price[2] and differentiation. The latter can take many different forms, among which the literature usually places the greatest stress on superior product/service, the totality of supply (when a firm has a broad product line and offers support and complementary products/services), speed (fast delivery), flexibility, and the positive image of a firm (Kotha, Vadlamani, 1995; Sashi, Stern, 1995; Helms, Ettkin, 2000) (see Figure 1).

If we agree with the positional definition of competitive advantage from the customer's point of view, it becomes clear why resources, capabilities and knowledge cannot be understood as a competitive advantage of a firm as proposed, for example, by Day and Wensley (1988). The reason is that a firm's resources cannot generally be seen by its customers. Even if they can be seen, the customers will not remain loyal to a firm solely based on its superior resources. A firm's resources, capabilities and knowledge should therefore not be understood as forms but rather as bases or sources of a firm's competitive advantage. A similar logic can also be applied to explain why one of the two

[1] A more detailed discussion on a 'positional' competitive advantage is presented by Ma (2000b).

[2] Mintzberg believes lower price is just another form of differentiation. He labels it differentiation by price (Kotha, Vadlamani, 1995).

FIGURE 1: Forms of a firm's competitive advantage



forms of competitive advantage is lower price (Kotha, Vadlamani, 1995; Swann, 1994) and not lower costs as interpreted, for instance, by Porter (1985; 1991), Bamberger (1989), and Pitt, Ewing and Berthon (2000). As proposed by Mintzberg (Kotha, Vadlamani, 1995), unless accompanied by lower price cost leadership does not contribute to superior customer value and hence does not provide an advantage in itself. It is therefore better to treat lower price as a form of competitive advantage while simultaneously being aware that, at least in the long run, a lower price must be based on lower costs.

Another interesting question we need to deal with is the dilemma of simultaneous cost and differentiation advantage. As proposed by Porter (1980), firms mostly cannot choose more than one (cost leadership or differentiation) generic business strategy because implementing either of them requires total commitment and supporting organisational arrangements that are diluted if there is more than one primary target. Although we agree with Porter's idea of 'pure' generic strategies, we believe these strategies should not be seen as synonyms for the forms of competitive advantage. In other words, the idea of pure generic business strategies does not directly interfere with the idea of simultaneous cost and differentiation advantage. A firm should indeed concentrate on only one of the generic business strategies, but it can still find itself in a position (for example, due to rare and valuable resources) of having a simultaneous cost and differentiation advantage. We can therefore agree with many other authors (see, for instance, Flynn, Schroeder, Sakakibara, 1995; Flynn, Flynn, 1996) that a firm can offer a superior (differentiated) product at a lower price. In addition, Karnani (1984) believed that both forms of competitive advantage are continuums, where more of one can be a substitute for less of another (a trade-off). This means a firm's competitive advantage results from an appropriate combination of a firm's price (cost) and differentiation position.

A review of the relevant literature on the relationship between forms of competitive advantage and firm performance reveals that most authors agree on the positive influence of a competitive advantage on firm performance[3] (Piercy, Kaleka, Katsikeas, 1998; Spanos, Lioukas, 2001), particularly in the form of product/service superiority (Peach, 1992; Kroll, Wright, Heiens, 1999) and speed (Sullivan, Kang, 1999). On the other hand, only a few believe that a competitive advantage does not always result in superior performance (Coyne, 1986; Ma, 2000a) because rents (as a consequence of competitive advantage) can be appropriated by different individuals (Coff, 1999). Where they are, for example, appropriated by employees this will result in higher salaries and not in a firm's superior financial performance (for instance, return on equity). With regard to the relative influence of price and differentiation advantage on firm performance, there seem to be more authors who believe a differentiation advantage leads to greater firm performance than a price (cost) advantage (see, for instance, Caves, Ghemawat, 1992; Doyle, Wong, 1998). Similarly, a simultaneous price (cost) and differentiation advantage seems to result in greater performance than a competitive advantage in just one of the two forms (White, 1986; Faulkner, Bowman, 1992).

3. RESEARCH APPROACH

Based on the purpose of this paper several research hypotheses that deal with competitive advantage and firm performance were developed, as follows:

- H1: Firms with a competitive advantage are more successful than firms that have no competitive advantage.
- H2: Firms with a competitive advantage in a lower price are more successful than firms that have no competitive advantage.
- H3: Firms with a competitive advantage in differentiation are more successful than firms that have no competitive advantage.
- H4: Firms with a simultaneous competitive advantage in a lower price and differentiation are more successful than firms that have no competitive advantage.
- H5: Firms with a competitive advantage in differentiation are more successful than firms with a competitive advantage in a lower price.
- H6: Firms with a simultaneous competitive advantage in differentiation and a lower price are more successful than firms with competitive advantage in just one of the two forms.
- H7: A stronger competitive advantage in any of the discussed forms is reflected in greater firm performance.
- H8: Different forms of competitive advantage have different influences on firm performance.

[3] Many authors even unduly treat competitive advantage and firm performance as synonyms (Buckley, Pass, Prescott, 1988; Francis, Tharakan, 1989; Kolar, Tomažič, 1993).

The empirical research in this paper forms part of a broader study on the strategic behaviour and competitive advantages of Slovenian firms. Data were collected by sending questionnaires[4] by post to the Chief Executive Officers or the members of top management of randomly selected firms. In selecting the firms the *Gospodarski vestnik* (2002) database was used. As this database includes firms, i.e. economic subjects that are legal entities (not natural persons), from all sectors (industries), size groups, age groups etc., we can say that the target population encompasses all Slovenian firms (i.e. all legal entities within the group of economic subjects). The research covered the period from May 2002 till October 2002. By the end of October 2002, questionnaires from 225 (out of the 508 initially distributed) Slovenian firms had been satisfactorily completed and returned to the author, meaning that the response rate was 44.3%. The respondents were mostly Chief Executive Officers (36.4%), assistant managers (27.6%) or the members of top management (25.3%). In the remaining 10.7% the respondents were the heads of different (mostly advisory) departments such as controlling, accounting etc.

Due to the broader goals[5] of the research we used stratified sampling when selecting firms in the sample. This means that the sample consisted of an equal number (33.3%) of small, medium-sized and large firms[6]. With regard to the sector appurtenance, there were 33.3% of manufacturing firms, 34.2% of service firms, and 32.4% of trading firms. Regarding the legal form of the firms, we had 45.3% of public limited companies and 54.7% of private limited companies. As for the year of foundation, 50.7% of the firms were founded in 1989 or before (i.e. before the transition started), while the others (49.3%) were founded in 1990 or later. According to their ownership distribution, 3.6% of the firms had mostly state ownership, 33.8% of the firms involved the managers as majority owners, 10.2% of the firms had employees as the majority owners, while in 52.4% of cases the firms were mostly owned by external owners. In most firms (88.0%) the domestic (Slovenian) capital was in the majority. In view of the prevailing markets, 29.4% of the firms earned most of their revenues in the local market, 43.1% in the Slovenian market as a whole, 4.0% in ex-Yugoslav markets, 20.0% in the EU market, and only 3.1% in European markets outside of ex-Yugoslav republics and the EU. Since

[4] After consultation with leading Slovenian professors of management (in order to ensure the maximum reasonableness and validity) the questionnaire was designed by the authors.

[5] The goals of the research were much wider than the goals presented in this paper. Among other things, we also wanted to examine differences in the sources and forms of competitive advantage between different groups of firms such as manufacturing, service and trading firms, large, medium-sized and small firms, and so on. In order to have a sufficient number of large firms in the sample, as required to carry out these analyses, stratified sampling was used.

[6] The size of firms in Slovenia (as well as in this research) is defined by law. Small firms are those that meet at least two of the following three conditions: (1) the average number of employees in the last year does not exceed 50; (2) sales in the last year do not exceed SIT 1 billion; and (3) average assets in the last year do not exceed SIT 0.5 billion. Medium-sized firms are those that are not small and meet at least two of the following three conditions: (1) the average number of employees in the last year does not exceed 250; (2) sales in the last year do not exceed SIT 4 billion; and (3) average assets in the last year do not exceed SIT 2 billion. Firms that cannot be defined as small or medium-sized are large firms (Uradni list RS, 2001).

the structure of firms in the sample, especially according to the criterion of size distribution, was quite different from the actual structure[7] of Slovenian firms, it cannot be said that the sample is completely representative. The reason for this primarily lies in the use of stratified sampling which, as already explained, was influenced by the research's broader goals.

The questions in the questionnaire covered two important aspects of firm competitiveness, namely the forms of competitive advantage[8] and their consequences, i.e. firm performance. To estimate firm performance we used financial and nonfinancial indicators. As for the financial performance indicators, firms were asked to provide the data needed to calculate: (1) return on equity; (2) return on assets; (3) return on sales; (4) the revenues-to-expenses ratio; (5) the sales-to-operating-expenses ratio; (6) labour productivity; (7) value added per employee; (8) the current liquidity ratio; and (9) sales growth. On the other hand, they were also asked to provide data on several nonfinancial performance indicators, namely: (1) percentage of loyal customers; (2) percentage of loyal suppliers; (3) turnover (of staff); (4) share of expenses on training and education; (5) share of expenses on research and development; (6) percentage of reclaimed deliveries; (7) market share growth; (8) whether an ISO 9000 certificate was acquired; and (9) whether an ISO 14000 certificate was acquired.

4. RESEARCH FINDINGS AND DISCUSSION

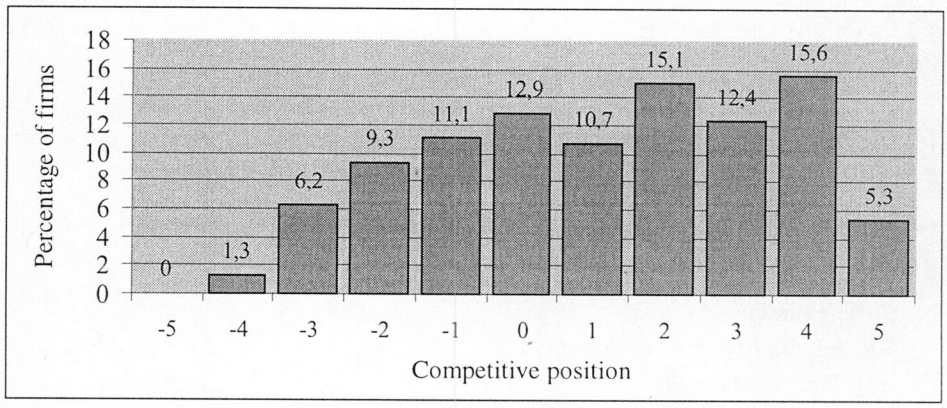
In order to determine the firms' competitive advantages we first asked managers to estimate the competitive position of their firms on a scale of –5 (denoting an extreme competitive disadvantage) to +5 (denoting an extreme competitive advantage). Given that the selection of firms in the sample was random, the expected value of competitive position was around 0. However, in our case the average value of a competitive position equals 1.13, which means that the estimates are slightly skewed to the left (see Figure 2),

[7] The actual structure of Slovenian firms shows that at the end of 2001 there were 95.0% of small firms, 4.1% of medium-sized firms, and only 0.9% of large firms. With regard to sector appurtenance, 17.4% of firms were in the manufacturing sector, 45.4% were in the service sector, while 37.2% were in the trading sector. From the legal form aspect, 83.2% of firms were companies with limited liability, 8.2% were formed as general partnerships, 2.6% were public limited companies, while the remaining firms (6.0%) had other legal forms (Statistical Office of the Republic of Slovenia, 2002; Chamber of Commerce and Industry of Slovenia, 2000).

[8] Since any discussion of competitive advantage is usually more reasonable at the strategic business unit (SBU) level than the corporate level, respondents were asked to take this fact into account. Where a company was diversified enough to say it had at least two SBUs (mostly large and also some medium-sized companies), respondents were asked to provide answers for one, preferably the most important, SBU. On the other hand, if a company as a whole was a single SBU (all undiversified, i.e. mostly medium-sized and small companies) respondents were asked to provide answers for the company as a whole. In this paper (although we are well aware of the distinction between both organisational levels), all units, i.e. whole companies and SBUs, are labelled 'firms' to avoid any unnecessary notional confusion.

indicating that managers are quite optimistic regarding the competitive position of their firms. Also, the value of standard deviation (2.38) demonstrates a high level of managers' disagreement over the competitive position of their firms.

FIGURE 2: Competitive position of Slovenian firms



Slovenian managers also estimate the competitive position of their firms as being quite long-term and sustainable. Only 15.6% of firms have a short-term competitive (dis)advantage, while in the remaining 84.6% of firms the competitive (dis)advantage lasts at least one year (in 29.3% even more than three years) (see Table 1). This result obviously supports the idea that a firm's competitive advantage is a long-term construct, meaning it is durable (Beard, Easingwood, 1992) or sustainable (Ghemawat, 1986; Williams, 1992; Oliver, 1997).

TABLE 1: Duration of the competitive (dis)advantage of Slovenian firms

Duration of competitive (dis)advantage	**Frequency**	**Percentage**
a) Less than a month	11	4.9
b) More than a month but less than a year	24	10.7
c) One to two years	54	24.0
d) Two to three years	70	31.1
e) More than three years	66	29.3
Total	225	100.0

Managers were also asked to estimate the strength of each analysed form of competitive advantage on a five-point Likert's scale (1 = no competitive advantage, 5 = huge competitive advantage). The results (see Table 2) show that Slovenian firms build their competitive advantage on differentiation (mean = 2.99) more than on a lower price (mean = 2.60). Also, the managers' agreement on the strength of all forms of differentiation advantage seems to be a bit higher (standard deviation between 1.08 and 1.18) than their agreement on the strength of a price advantage (standard deviation = 1.23). Of the different forms of differentiation advantage, flexibility is the most important (mean = 3.10).

TABLE 2: Forms of competitive advantage of Slovenian firms

Forms of competitive advantage	Average	Standard deviation
a) Lower price	2.60	1.23
b) Differentiation	2.99	1.15
b1) Superiority of a product/service	2.92	1.18
b2) Totality of supply	3.02	1.13
b3) Speed	3.02	1.16
b4) Flexibility	3.10	1.10
b5) Positive image	3.02	1.08

Based on the answers regarding their competitive position, the duration of the competitive (dis)advantage and the strength of each form of competitive advantage, firms were divided into four groups, namely 'firms without a competitive advantage', 'firms with mostly a price advantage', 'firms with mostly a differentiation advantage', and 'firms with a simultaneous price and differentiation advantage' (see Table 3). A firm was said to have a competitive advantage (48.0% of firms) if its competitive position was estimated as positive (at least +1 on the –5 to +5 scale), if its competitive advantage lasted at least a month and if at least one of the forms of competitive advantage was estimated as being very strong (at least 4 on the 1 to 5 scale), while the remaining forms of competitive advantage were not estimated as nonexistent (at least 2 on the 1 to 5 scale). If none of these conditions was fulfilled, a firm was said to be 'without a competitive advantage' (52.0% of firms). Firms with a competitive advantage were further divided according to their prevailing form. Firms that estimated a price advantage higher than a differentiation advantage were labelled 'firms with mostly a price advantage' (12.4% of firms), firms that estimated differentiation advantage higher than a price advantage were labelled 'firms with mostly a differentiation advantage' (19.6% of firms), while firms with equal estimations of price and differentiation advantage were labelled 'firms with a simultaneous price and differentiation advantage' (16.0% of firms).

TABLE 3: Slovenian firms according to the prevailing form of competitive advantage

Prevailing form of competitive advantage	Frequency	Percentage
a) No competitive advantage	117	52.0
b) Competitive advantage in lower price	28	12.4
c) Competitive advantage in differentiation	44	19.6
d) Simultaneous competitive advantage in both forms	36	16.0
Total	225	100.0

In Table 4 differences in the selected performance indicators among previously defined groups of firms are analysed using contrast analysis. In each contrast analysis the null hypothesis, defined as 'average values of dependent variable (Y) for two groups of firms, defined by independent variable (X), are equal (H_0: $\mu_i = \mu_j$)', is tested. Using a two-tailed t-test, the minimal significance rate at which each null hypothesis can be rejected is computed. The alternative hypothesis in each contrast analysis can be defined as 'average values of dependent variable (Y) for two groups of firms, defined by independent variable (X), are not equal (H_0: $\mu_i = \mu_j$)'. The computed t-tests and their significance levels for contrasts 1, 2, 3 and 4 show that firms with any form of competitive advantage perform financially better (i.e. on average they achieve a significantly higher return on equity, return on assets, return on sales, revenues-to-expenses ratio, sales-to-operating-expenses ratio, and value added per employee) than firms without any competitive advantage. Almost the same conclusion can be drawn with regard to most nonfinancial performance indicators (i.e. percentage of loyal customers, turnover, share of expenses on training and education, share of expenses on research and development, percentage of reclaimed deliveries, and market-share growth). Based on all these results, it can probably be concluded that *hypotheses 1, 2, 3 and 4* can be *confirmed*. On the other hand, the results (contrast 5) do not support hypothesis 5. Although firms with mostly a differentiation advantage have higher average values of most performance indicators than firms with mostly a price advantage, these differences are not high enough to be statistically significant. *Hypothesis 5* must therefore be *rejected*. Finally, with respect to hypothesis 6, the conclusion is not so clear. Average values of most performance indicators show that firms with a simultaneous competitive advantage obviously perform slightly better than firms with a competitive advantage in just one of the two basic forms, although most t-tests do not reveal statistically significant differences. In spite of this, we can still *partially confirm hypothesis 6* since the performance of firms with a simultaneous advantage seems to be statistically better in view of the most important financial performance indicators such as return on equity, return on assets, and return on sales.

TABLE 4: Examination of the influence of the form of competitive advantage on firm performance using contrast analysis

Dependent variable (Y) = Firm performance	Average of Y				Contrast analysis[a]					
	X = no comp. advant.	X = lower price	X = differentiation	X = simult. advant.	Contrast 1: t-test (α)	Contrast 2: t-test (α)	Contrast 3: t-test (α)	Contrast 4: t-test (α)	Contrast 5: t-test (α)	Contrast 6: t-test (α)
Return on equity (%)	3.16	13.47	15.51	23.40	-9.019 (0.000)	-4.161 (0.000)	-5.930 (0.000)	-9.019 (0.000)	-0.717 (0.474)	-3.677 (0.000)
Return on assets (%)	1.27	6.28	6.08	11.70	-9.594 (0.000)	-4.928 (0.000)	-6.380 (0.000)	-8.437 (0.000)	0.184 (0.855)	-4.363 (0.000)
Return on sales (%)	0.44	4.97	5.91	8.73	-9.769 (0.000)	-6.175 (0.000)	-4.974 (0.000)	-8.013 (0.000)	-0.758 (0.451)	-2.849 (0.006)
Revenues-to-expenses ratio	1.007	1.055	1.076	1.103	-8.613 (0.000)	-5.783 (0.000)	-3.838 (0.000)	-7.628 (0.000)	-1.104 (0.274)	-2.407 (0.019)
Sales-to-operating-expenses ratio	1.004	1.049	1.076	1.099	-7.547 (0.000)	-4.374 (0.000)	-3.986 (0.000)	-6.574 (0.000)	-1.402 (0.166)	-2.229 (0.029)
Labour productivity (SIT mill.)	21.77	24.40	47.09	28.93	-2.451 (0.016)	-0.671 (0.505)	-2.061 (0.045)	-1.879 (0.065)	-1.805 (0.077)	0.964 (0.338)
Value added per employee (SIT mill.)	4.03	6.22	6.13	7.35	-6.414 (0.000)	-3.189 (0.003)	-3.863 (0.000)	-4.892 (0.000)	0.117 (0.908)	-1.504 (0.138)
Current liquidity ratio	1.14	1.30	1.50	1.41	-2.649 (0.009)	-0.962 (0.342)	-1.918 (0.061)	-2.493 (0.016)	-0.937 (0.352)	-0.135 (0.893)
Sales growth (%)	26.47	27.50	120.9	52.15	-1.114 (0.270)	-0.094 (0.925)	-0.912 (0.367)	-1.236 (0.221)	-0.905 (0.370)	0.403 (0.689)
Percentage of loyal customers (%)	64.21	75.98	70.29	75.39	-3.439 (0.001)	-3.106 (0.003)	-1.526 (0.131)	-2.990 (0.004)	1.236 (0.221)	-0.588 (0.558)
Percentage of loyal suppliers (%)	78.43	80.77	77.74	85.33	-1.174 (0.241)	-0.618 (0.537)	0.216 (0.829)	-2.008 (0.046)	0.696 (0.487)	-1.636 (0.103)
Turnover (of staff) (%)	9.92	6.04	5.84	3.66	5.082 (0.000)	2.658 (0.008)	3.331 (0.001)	4.745 (0.000)	0.123 (0.902)	1.604 (0.110)
Share of expenses for training (%)	1.46	2.38	2.82	3.91	-6.635 (0.000)	-3.236 (0.002)	-4.577 (0.000)	-4.914 (0.000)	-1.177 (0.243)	-2.529 (0.015)
Share of expenses for R&D (%)	1.18	3.03	3.38	4.80	-7.276 (0.000)	-3.833 (0.001)	-4.056 (0.000)	-5.365 (0.000)	-0.507 (0.613)	-2.145 (0.036)
Percentage of reclaim. deliveries (%)	1.96	0.99	0.88	0.77	5.499 (0.000)	3.831 (0.000)	4.936 (0.000)	5.392 (0.000)	0.518 (0.606)	0.923 (0.359)
Market share growth (%)	2.40	6.23	7.75	15.90	-4.751 (0.000)	-1.722 (0.092)	-2.771 (0.007)	-4.827 (0.000)	-0.595 (0.554)	-3.070 (0.003)
Certificate ISO 9000	0.360	0.643	0.477	0.389	-2.187 (0.030)	-2.758 (0.006)	-1.367 (0.173)	-0.321 (0.749)	1.400 (0.163)	1.700 (0.091)
Certificate ISO 14000	0.077	0.214	0.091	0.056	-1.055 (0.293)	-1.660 (0.107)	-0.278 (0.782)	0.465 (0.643)	1.366 (0.179)	1.631 (0.107)

Notes: [a]

Contrast 1: no comp. advant. / any comp. advant.;
Contrast 2: no comp. advant. / lower price;
Contrast 3: no comp. advant. / differentiation;
Contrast 4: no comp. advant. / simultaneous advant.;
Contrast 5: lower price / differentiation;
Contrast 6: single advant. / simultaneous advant.

TABLE 5: Examination of the influence of the different forms of competitive advantage on firm performance using regression analysis

Dependent variable (Y) = Firm performance		Independent variable (X) = Form of competitive advantage							
		Average	Lower price	Differe-ntiation	Product/service	Total supply	Speed	Flexi-bility	Positive image
Return on equity	R^2	0.413 (+)	0.293 (+)	0.425 (+)	0.389 (+)	0.365 (+)	0.386 (+)	0.380 (+)	0.346 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Return on assets	R^2	0.465 (+)	0.350 (+)	0.466 (+)	0.431 (+)	0.397 (+)	0.433 (+)	0.443 (+)	0.405 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Return on sales	R^2	0.423 (+)	0.309 (+)	0.429 (+)	0.401 (+)	0.383 (+)	0.370 (+)	0.402 (+)	0.375 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Revenues-to-expenses ratio	R^2	0.305 (+)	0.210 (+)	0.317 (+)	0.295 (+)	0.286 (+)	0.277 (+)	0.301 (+)	0.281 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sales-to-operating-expenses ratio	R^2	0.256 (+)	0.181 (+)	0.264 (+)	0.235 (+)	0.246 (+)	0.227 (+)	0.260 (+)	0.239 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Labour productivity	R^2	0.027 (+)	0.006 (+)	0.039 (+)	0.027 (+)	0.042 (+)	0.035 (+)	0.018 (+)	0.012 (+)
	α	0.014	0.251	0.003	0.014	0.002	0.005	0.044	0.107
Value added per employee	R^2	0.237 (+)	0.160 (+)	0.249 (+)	0.239 (+)	0.206 (+)	0.237 (+)	0.217 (+)	0.211 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Current liquidity ratio	R^2	0.032 (+)	0.009 (+)	0.044 (+)	0.047 (+)	0.046 (+)	0.047 (+)	0.050 (+)	0.067 (+)
	α	0.007	0.155	0.002	0.001	0.001	0.001	0.001	0.000
Sales growth	R^2	0.002 (+)	0.000 (+)	0.003 (+)	0.003 (+)	0.006 (+)	0.005 (+)	0.005 (+)	0.006 (+)
	α	0.552	0.989	0.396	0.420	0.246	0.307	0.285	0.166
Percentage of loyal customers	R^2	0.074 (+)	0.055 (+)	0.075 (+)	0.077 (+)	0.063 (+)	0.075 (+)	0.068 (+)	0.077 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Percentage of loyal suppliers	R^2	0.027 (+)	0.016 (+)	0.029 (+)	0.033 (+)	0.024 (+)	0.029 (+)	0.016 (+)	0.030 (+)
	α	0.014	0.055	0.011	0.007	0.021	0.011	0.060	0.010
Turnover (of staff)	R^2	0.140 (−)	0.087 (−)	0.152 (−)	0.142 (−)	0.141 (−)	0.140 (−)	0.132 (−)	0.110 (−)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Share of expenses for training	R^2	0.253 (+)	0.139 (+)	0.287 (+)	0.264 (+)	0.253 (+)	0.271 (+)	0.259 (+)	0.243 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Share of expenses for R&D	R^2	0.248 (+)	0.194 (+)	0.244 (+)	0.244 (+)	0.213 (+)	0.203 (+)	0.223 (+)	0.220 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Percentage of reclaim. Deliveries	R^2	0.198 (−)	0.133 (−)	0.208 (−)	0.191 (−)	0.179 (−)	0.189 (−)	0.170 (−)	0.175 (−)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Market share growth	R^2	0.163 (+)	0.134 (+)	0.157 (+)	0.141 (+)	0.179 (+)	0.168 (+)	0.135 (+)	0.160 (+)
	α	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Certificate ISO 9000	R^2	0.002 (+)	0.002 (+)	0.001 (+)	0.002 (+)	0.001 (+)	0.001 (+)	0.001 (+)	0.001 (+)
	α	0.561	0.554	0.590	0.553	0.735	0.594	0.712	0.583
Certificate ISO 14000	R^2	0.016 (+)	0.019 (+)	0.012 (+)	0.007 (+)	0.007 (+)	0.008 (+)	0.010 (+)	0.015 (+)
	α	0.062	0.038	0.101	0.228	0.223	0.187	0.135	0.068

Notes: (+) Dependent variable (Y) positively depends on independent variable (X)
(−) Dependent variable (Y) negatively depends on independent variable (X)

In order to test hypothesis 7 (and to further verify hypotheses 1 to 4), the univariate linear regression analysis (with forms of competitive advantage as independent variables and performance indicators as dependent variables) is used. The advantage of the

regression analysis over the contrast analysis is that, in the regression analysis, both (dependent and independent) variables are measured either at an ordinal or scale level while, in the contrast analysis, the independent variable is measured at a nominal level. Thus, the regression analysis has more explanatory power than the contrast analysis. The null hypotheses, which we try to reject using the regression analysis, can be formulated as follows: 'dependent variable (Y) does not depend on independent variable (X) ($\beta = 0$ or $\rho_{xy} = 0$)'. On the other hand, appropriate alternative hypotheses read as follows: 'dependent variable (Y) depends on independent variable (X) ($\beta \neq 0$ or $\rho_{xy} \neq 0$)'. In Table 5 the minimal significance rates at which null hypotheses can be rejected are computed. Also, the determination coefficients (R^2) are computed in order to be able to assess the shares of the regression-related variances of individual performance indicators. The results show that all forms of competitive advantage have a positive influence on all performance indicators, except on turnover and the percentage of reclaimed deliveries (which was fully expected since smaller turnover and fewer reclaimed deliveries mean better performance). The influence of the different forms of competitive advantage on most performance indicators (except sales growth and ISO 9000 and 14000 certificates) is not only positive but also statistically significant, which means that *hypothesis 7* can be *confirmed* (these results also provide additional confirmation of hypotheses 1 to 4). Based on the estimated determination coefficients it can be concluded that the shares of the regression-related variances are somewhat higher for the financial performance indicators (mostly above 20%) than they are for the nonfinancial performance indicators (mostly below 20%). In addition, the shares of the regression-related variances of individual performance indicators are higher if the differentiation advantage (or any of its forms) is used as an independent variable. These shares are mostly 5 to 10 percent points above the shares of the regression-related variances if the price advantage is used as an independent variable.

Although the regression analysis already offers some insights into the relative influence of the different forms of competitive advantage on firm performance, the coefficients of partial correlation have to be estimated to allow a more precise picture of this relative influence. The null hypotheses, which we try to reject using the partial correlation analysis, can be formulated as follows: 'dependent variable (Y) does not depend on independent variable (X) ($\rho_{part} = 0$)'. On the other hand, appropriate alternative hypotheses read as follows: 'dependent variable (Y) depends on independent variable (X) ($\rho_{part} \neq 0$)'. In Table 6 the minimal significance rates at which null hypotheses can be rejected are computed. Further, the coefficients of partial correlation (Part. R) are computed in order to be able to assess the isolated (i.e. purified of the influence of other independent variables) influence of each form of competitive advantage on individual performance indicators. The results show that the differentiation advantage seems to have a much more powerful and statistically significant positive influence on most performance indicators (except on the ISO 9000 and 14000 certificates) than a price advantage, for which most coefficients are not statistically significant. As to a differentiation advantage, the coefficients of partial correlation are mostly between 0.2 and 0.4

TABLE 6: Examination of the influence of the different forms of competitive advantage on firm performance using partial correlation analysis

Dependent variable (Y) = Firm performance		Independent variable (X) = Form of competitive advantage						
		Lower price	Differe-ntiation	Product/service	Total supply	Speed	Flexi-bility	Positive image
Return on equity	Part. R (rank)	0.033 (6)	0.433 (1)	0.025 (7)	0.067 (4)	0.127 (2)	0.093 (3)	-0.038 (5)
	α	0.620	0.000	0.718	0.320	0.061	0.170	0.573
Return on assets	Part. R (rank)	0.093 (4)	0.431 (1)	-0.001 (7)	0.023 (5)	0.134 (3)	0.143 (2)	-0.004 (6)
	α	0.167	0.000	0.992	0.739	0.047	0.034	0.957
Return on sales	Part. R (rank)	0.060 (4)	0.421 (1)	0.044 (5)	0.067 (3)	0.036 (6)	0.107 (2)	0.021 (7)
	α	0.375	0.000	0.521	0.324	0.597	0.113	0.760
Revenues-to-expenses ratio	Part. R (rank)	0.007 (7)	0.368 (1)	0.009 (6)	0.073 (3)	0.043 (4)	0.102 (2)	0.027 (5)
	α	0.921	0.000	0.892	0.282	0.527	0.132	0.695
Sales-to-operating-expenses ratio	Part. R (rank)	0.021 (7)	0.319 (1)	-0.058 (4)	0.096 (3)	0.052 (5)	0.130 (2)	0.035 (6)
	α	0.760	0.000	0.395	0.157	0.447	0.054	0.608
Labour productivity	Part. R (rank)	-0.141 (4)	0.228 (1)	-0.046 (6)	0.205 (2)	0.152 (3)	-0.019 (7)	-0.140 (5)
	α	0.035	0.001	0.496	0.002	0.024	0.779	0.037
Value added per employee	Part. R (rank)	-0.004 (6)	0.324 (1)	0.058 (3)	0.008 (5)	0.089 (2)	0.022 (4)	0.001 (7)
	α	0.949	0.000	0.395	0.911	0.190	0.741	0.995
Current liquidity ratio	Part. R (rank)	-0.128 (3)	0.226 (1)	-0.057 (4)	0.056 (5)	0.026 (7)	0.039 (6)	0.150 (2)
	α	0.056	0.001	0.399	0.411	0.702	0.562	0.026
Sales growth	Part. R (rank)	-0.076 (4)	0.095 (1)	-0.086 (2)	0.083 (3)	0.049 (5)	0.046 (6)	0.036 (7)
	α	0.255	0.156	0.205	0.222	0.468	0.494	0.598
Percentage of loyal customers	Part. R (rank)	0.024 (5)	0.147 (1)	0.036 (3)	-0.023 (6)	0.025 (4)	-0.009 (7)	0.053 (2)
	α	0.723	0.028	0.592	0.732	0.712	0.893	0.438
Percentage of loyal suppliers	Part. R (rank)	-0.016 (5)	0.114 (2)	0.093 (3)	-0.012 (6)	0.000 (7)	-0.115 (1)	0.058 (4)
	α	0.808	0.088	0.171	0.858	0.996	0.089	0.391
Turnover (of staff)	Part. R (rank)	0.035 (6)	-0.267 (1)	-0.018 (7)	-0.095 (2)	-0.085 (3)	-0.044 (5)	0.079 (4)
	α	0.607	0.000	0.792	0.162	0.208	0.517	0.244
Share of expenses for training	Part. R (rank)	-0.120 (3)	0.429 (1)	-0.028 (6)	0.111 (4)	0.135 (2)	0.088 (5)	0.005 (7)
	α	0.072	0.000	0.683	0.100	0.045	0.193	0.943
Share of expenses for R&D	Part. R (rank)	0.082 (3)	0.261 (1)	0.128 (2)	-0.017 (6)	-0.051 (4)	0.014 (7)	0.033 (5)
	α	0.224	0.000	0.059	0.806	0.449	0.832	0.628
Percentage of reclaim. deliveries	Part. R (rank)	0.006 (6)	-0.293 (1)	-0.030 (4)	-0.051 (3)	-0.074 (2)	0.004 (7)	-0.018 (5)
	α	0.932	0.000	0.655	0.453	0.276	0.954	0.796
Market share growth	Part. R (rank)	0.084 (5)	0.184 (1)	-0.124 (4)	0.171 (2)	0.149 (3)	-0.033 (7)	0.058 (6)
	α	0.210	0.006	0.067	0.011	0.027	0.631	0.396
Certificate ISO 9000	Part. R (rank)	0.018 (4)	0.007 (7)	0.040 (1)	-0.037 (2)	-0.008 (6)	-0.033 (3)	0.016 (5)
	α	0.792	0.918	0.557	0.588	0.904	0.630	0.818
Certificate ISO 14000	Part. R (rank)	0.085 (1)	-0.003 (7)	-0.040 (4)	-0.045 (3)	-0.007 (6)	0.012 (5)	0.084 (2)
	α	0.207	0.961	0.555	0.508	0.923	0.860	0.214

for financial performance indicators and between 0.1 and 0.3 for nonfinancial performance indicators. With regard to the different forms of differentiation advantage, we can see that the flexibility-related and speed-related advantages over the competitors have the most powerful influence on a firm's performance. At the same time, we have to note that most coefficients of partial correlation between individual forms of competitive

advantage and financial performance indicators are not high enough to be statistically significant. In light of all these results a conclusion can be drawn that the different forms of competitive advantage have different influences on firm performance, which enables us to *confirm hypothesis 8*. We further tested hypothesis 8 by using multivariate regression analysis. However, since the results were almost totally identical to the results based on the partial correlation analysis, we do not analyse them here in detail.

5. CONCLUSION

By using different research methods several important conclusions can be drawn concerning the influence of a competitive advantage on firm performance. These conclusions may be summarised as follows:

1. Firms with any form of competitive advantage (price advantage, differentiation advantage, and simultaneous price and differentiation advantage) are more successful than firms that have no competitive advantage.
2. There are no statistically significant differences in the performance of firms with a competitive advantage in a lower price and firms with a competitive advantage in differentiation.
3. Firms with a simultaneous competitive advantage in differentiation and a lower price are more successful than firms with competitive advantage in only just of the two forms.
4. A stronger competitive advantage in any of the discussed forms is reflected in greater firm performance. The shares of the regression-related variances are somewhat higher for the financial performance indicators than they are for the nonfinancial performance indicators.
5. Different forms of competitive advantage have a different influence on firm performance. The differentiation advantage seems to have a much more powerful and statistically significant positive influence on most performance indicators than the price advantage. As to the different forms of differentiation advantage, the flexibility-related and speed-related advantages have the greatest influence on firm performance.

Based on all these conclusions, it is obvious that creating superior customer value (i.e. having a competitive advantage) does pay. Firms are more successful if they manage to either differentiate themselves from their competitors or supply products and services to customers at a reduced price. Although the research offers some important conclusions, its possible weaknesses should also be mentioned. Perhaps the most important weakness lies in the fact that real forms of competitive advantage are usually well hidden, making it impossible for a researcher to measure them completely objectively. For this reason, we had to use managers' relatively subjective assessments of the main forms of competitive advantage of their firms. This weakness might be partially avoided by

personally interviewing managers and/or by observing each firm over a longer period of time. Another possible weakness of this research is the use of stratified sampling, which was necessary due to the research's broader goals. The consequence of stratified sampling is that the sample is not completely representative, meaning the conclusions cannot be automatically extrapolated for all Slovenian firms. As a suggestion for further research, we believe that similar studies should also be carried out on a much more homogeneous sample of firms.

Our findings unfortunately cannot be adequately compared with the findings of similar empirical studies on the forms of competitive advantage since such studies (in both transitional and established market economies) are very few in number in the available scientific literature. In this respect, we believe the research has the potential to broaden our knowledge in the field of firm competitiveness. Further, we dare hope that our research is considered some kind of introduction to a continuing and more detailed discussion of the influence of the forms of competitive advantage on firm performance. Another important advantage of the research is the relatively large sample of firms involved, which allowed us to draw certain conclusions with minimum risk.

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