

Disparities in Entrepreneurial Orientation and Openness to Innovation among Budapest, the Pest Region, and Other Regions

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Abstract

Literature studies focusing on entrepreneurial orientation or openness to innovation mainly focus on large enterprises and multinational companies. Micro, small and medium-sized enterprises (MSMEs) are under-researched in Europe, however, their contribution to employment, the balance of trade, and GDP is broadly acknowledged among scholars. Experiences gathered through a qualitative study conducted with owner-managers of enterprises of all size categories preceded as well as helped to better establish and design our quantitative survey as recommended in various studies in international literature. This paper aims to examine the disparities in entrepreneurial orientation and openness to innovation between three separate regions in Hungary. Analyses were based on discovering statistically significant differences in terms of the region and the size category of companies. The study applied principal component analysis, Kruskal-Wallis, and Mann-Whitney nonparametric tests.

Keywords *Central Hungary, MSMEs, innovation, entrepreneurial orientation, openness to innovation*

JEL: *O10, O14, O18, O47, O50*

Introduction

Innovation creates opportunities for enterprises to grow, to flourish, to conquer new markets, and to become competitive in their industry (Mamun et al., 2017), however, an organizational culture that leaves no room for innovation or even adheres to obsolete, rigid business practices can make it way more difficult for enterprises to survive (Hamdan & Alheet, 2020). It is broadly accepted among scholars, that innovation is essential to businesses' long-term successful operation (Abbas et al., 2020; Ferreira & Lisboa, 2019). Innovation is therefore an essential part of the company's strategy as it is a means of exploiting the opportunities arisen in the market (Bakar & Zainol, 2015), and serves as a driving force behind productivity and economic growth (Al Mamun et al., 2016). For companies of the SME sector, innovation enables to acquire competitive advantages which include leveraging the company's existing resources to be the first to react in a market situation and to take a leading role (Hamdan & Alheet, 2020). Government Decision No. 2013/2015 (29th December) declared the separation of the former Central Hungary Region with more objectives, among others to make it easier for businesses in Pest Region to participate in tenders. However, qualitative research conducted between 2022 and 2023 among owner-managers in all size categories in Hungary indicated entrepreneurs still perceive disadvantages in case of doing business in the very region. According to the Hungarian Central Statistical Office's data, micro and small-sized enterprises are employers of approximately 56% of all employees in Hungary, yet at the same time they can contribute to the Hungarian GDP by not more than 30%. The majority of these enterprises are found in the region in question. In this paper, we investigate whether there are

significant differences in innovation outcomes between the former Central Hungary region and other regions in Hungary years subsequently to the abovementioned Government Decision.

Research Gap

International literature on innovation and innovativeness research is mainly based on studying large enterprises and high-tech companies (Raghuvanshi et al., 2019; Verhees & Meulenbergh, 2004). Only a limited number of studies focus on the investigation of innovation and innovativeness among small businesses (Drucker, 2002; Ettlie & Rosenthal, 2011; Hyvärinen, 1990; Jaworski et al., 2000; Slater & Narver, 1998). Analyses and surveys conducted by the EU do not involve micro-sized enterprises, that is, businesses under ten employees. Therefore also researchers often ignore this segment in their works (Matejun, 2016). Furthermore, in the case of innovation and innovativeness of large enterprises, the applicability and generalizability of the results in international studies are at least questionable in the case of micro and small-sized enterprises since the innovation of those latter basically differs from large organizations' innovation practices (Taghizadeh et al., 2018; Verhees & Meulenbergh, 2004; Zawislak et al., 2018). However, according to Michaelidou et al. (2011), small companies are more innovative compared to large organizations, therefore they are also expected to be more susceptible to new technologies, yet at the same time, research on innovation and innovativeness is still incomplete. We think a research gap is evident in this topic. That's why the main objective of our study is to contribute to this lack by investigating disparities in the entrepreneurial orientation and openness to innovation between the former Central Hungary Region, consisting of Budapest and Pest Region, and other regions in Hungary using a database of a quantitative survey conducted in 2023. In this consideration, 'Other Regions' consist of the 18 counties besides Pest Region and the capital city.

Literature Review

Innovation

Oslo Handbook (OECD, 2005) distinguishes three types of innovation such as worldwide, market, and firm-only innovations. Academists mainly focus on worldwide and market innovations due to their better researchability, yet in the case of small businesses, firm-only innovations are more important (Martínez-Román & Romero, 2017; North & Smallbone, 2000). The latter type of innovations, almost with no exception, are so called incremental innovations. Incremental innovations strengthen and enhance existing capabilities and work methods of the company, while radical innovations often require organizations to develop completely new capabilities and approach (Mol & Birkinshaw, 2014), which small businesses are often unable to afford. Although innovation requires re-investment of capital from time to time, it is considered of utmost importance and a key economic activity in terms of promoting the well-being of modern national economies (Marzi et al., 2017; Vanhala & Ritala, 2016). Welfare of today countries therefore depends, to a large extent, on the success of the heterogenous micro, small and medium-sized enterprises (MSMEs) (Ajaz Khan et al., 2019; Chonsawat & Sopadang, 2020). Due to the significance of innovation detailed above, its promotion in the MSMEs segment shall remain in the focus of the policymakers' attention at the European, national, regional, and local levels (Jones & Tilley, 2003).

Entrepreneurial Orientation

We agree that size is one of the most important factors affecting the structure and processes of an organization (Damanpour, 1996, p. 695). Therefore it is self evident that in the life of micro and small-sized businesses, the character of owner manager itself is a determining factor. Based on this, we find it unavoidable to analyse the entrepreneurs' attitude towards innovation outcomes as they are the driving force in their companies and also in the economy (Ajaz Khan et al., 2019). Entrepreneur's orientation is decisive when it comes to innovation outcomes. Miller (1983) suggested that entrepreneurship indicates the extent to which a company innovates, acts proactively, and takes risks. Entrepreneurial orientation consists of dimensions such as autonomy, innovativeness, risk-taking, proactiveness, and competitive aggressiveness (Lumpkin & Dess, 1996). Autonomy refers to the independent action of an individual or a team in bringing forth an idea or a vision and carrying it through to completion (Lumpkin & Dess, 1996, p. 140). Proactiveness refers to how firms relate to market opportunities in the process of new entry, while competitive aggressiveness refers to how firms relate to the competition and respond to trends and demands that already exist in the marketplace (Wang, 2008, p. 637).

Proactiveness and competitive aggressiveness are distinct dimensions but are similar concepts (Lumpkin & Dess, 1996; Wang, 2008). Risk-taking of a company refers to the degree to which entrepreneurs are willing to make large and risky resource commitments (Miller & Friesen, 1978, p. 923). Innovativeness reflects a firm's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes (Lumpkin & Dess, 1996, p. 142). The work of Lumpkin & Dess (1996) is quite a benchmark in entrepreneurial orientation literature due to its very high citation number (over 16,000). Later studies in the literature, however, defined entrepreneurial orientation without one or the other dimension stipulated in the aforementioned work. For instance, Rhee et al. (2010) in their study identify entrepreneurial orientation as a construct which consists of 2 elements only: proactiveness and risk-taking. Hult et al. (2004) distinguish innovativeness from entrepreneurial orientation as it does not require new market entry. In recent decades, elements of entrepreneurial orientation according to Lumpkin & Dess (1996) have been defined in many ways. For a brief review, see Table 1 below).

Table 1. Summary Table of Entrepreneurial Orientation's Components

| Study | Proactiveness | Competitive Aggressiveness | Risk-Taking | Autonomy | Innovativeness |
|-----------------------|--|---|---|---|---|
| Venkatraman (1989) | continuous search for market opportunities and experimentation with potential responses to changing environmental trends | the posture adopted by a business in its allocation of resources for improving market positions at a faster rate than competitors | various resource allocation decisions | not defined in the study | |
| Slevin & Covin (1990) | willingness to initiate actions to which competitors need to respond | not defined | very high-risk projects with high return rates are preferred | not defined in the study | willingness to place strong emphasis on R&D, new products and services, technological improvement |
| Hult et al. (2004) | bold action-oriented positioning | | not defined in the study | | the capacity to introduce of some new process, product, or idea in the organization |
| Ejdys (2016) | readiness to take actions to enforce competitors' reaction | warlike attitude, a reaction aiming at improving the position or overcoming any uncertainties in a competitive market | organization's willingness to break away from a tried-and-true venture into the unknown | the possibility to take independent actions within the organization, aiming at the realization of the business aims of the organization | innovativeness is the process of linking the resources of an organization |

Source: authors' construction

In the area of entrepreneurial orientation, innovation, and innovativeness, the number of empirical studies is numerous but only a lesser part of scholars' works applies both qualitative and quantitative approach. We first conducted a series of interviews with owner managers of all size categories, then using experiences gathered during the qualitative research, completed a questionnaire to proceed with a quantitative research as suggested by Abrunhosa & Moura E Sá (2008), Bryan Jean et al. (2017), and Cheng et al. (2014). A brief content analysis of referred papers is found in Table 2 below.

Table 2: Content Analysis of Studies Including both Qualitative and Quantitative Research

| Source | Aim of Study | Conceptual Approach of Innovation & Innovativeness | Data & Method | Main Conclusions |
|-------------------------------|--|--|--|--|
| Cheng et al. (2014)) | The paper investigates inter-relationships among process, product & organizational types of eco-innovation. | In the paper, eco-innovation is defined as follows: the production, assimilation or exploitation of a product, production process, service or management or business methods that is novel to the organization and which results, throughout its life cycle, in a reduction of environmental risk, pollution and other negative impacts of resources used compared to relevant alternatives. | 24 in-depth interviews and one focus group interview (12 participants) with managers in Taiwan. All interviewees had over 15 years of work experience in environmental innovation management. Questionnaire completion based on qualitative study's experience. Quantitative data collection: 121 completed questionnaires, 24 items of 7-point Likert scale. ANOVA, SEM, Chi-square test. | Research findings suggest that eco-process and eco-product innovations partially mediate the effects of eco-organizational innovation, and eco-product innovation mediates eco-process innovations' effects on business performance. Business performance is both directly and indirectly affected by all three types of eco-innovations. |
| Abrunhosa & Moura E Sá (2008) | Research objective is to analyse to what extent the introduction of TQM is supporting innovation in footwear industry in Portugal. | Innovation is a key to economic development as it leads to productivity & competitive gains. Innovation also embraces the creation or application of new knowledge, or the recombination of existing knowledge, to generate value through the introduction of various types of innovation outcomes. | Unidentified number of semi-structured interviews with internal & external company informants were conducted. Internal informants: senior & top managers in business firms. External informants: shareholders, executives of competitors, industry experts. Questionnaire completion based on experiences acquired in qualitative research. Questionnaire completed by 20 companies employing each at least 45 personnel. Cronbach-alpha, Convergent validity, Discriminant validity, KMO test, Bartlett's test. | TQM principles are positively related to the employment of technological innovations. According to research findings, TQM principles shall be simultaneously implemented in the company as they complement each other. Impact of communication, team work & supportive HR management practices have a particularly positive effect on innovation. |
| Bryan Jean et al. (2017) | Study aims to discover key drivers of supplier innovativeness and examine the role of cross-national differences in shaping it. Research was based on Taiwanese companies involved in international supplier activities. | Innovativeness is a behaviour aimed at openness to apply new ideas & technologies. Innovation is an outcome-oriented measure. | 15 in-depth interviews with senior client relationship managers and marketing managers of Taiwanese electronics industry manufacturers were conducted. Questionnaire was completed based on qualitative interviews experience. Questionnaire was then sent to employees in same position as interviewees at 5,000 largest companies with same profile in Taiwan. CFA, RMSEA. | Customer orientation of suppliers is the most important factor of raising the level of innovativeness of suppliers. Suppliers in emerging countries' markets proactively need to develop their customer orientation in order to enhance their innovative capabilities. Innovativeness contributes to increased customer dependence as well as improves relationship performance. |

Source: authors' construction

Data and Method

The data of this study were gathered via an online available questionnaire using 5-point Likert scale items (Azar & Ciabuschi, 2017; Edison et al., 2013; Najafi-Tavani et al., 2018), where '5' represented 'fully agree', and '1' represented 'fully disagree'. Every item was a mandatory 'question'. All items have been adapted from international studies. Certain items were reverse coded which is indicated by a star (*). The introductory text before the questionnaire made it clear that the purpose of the data collection was not to collect the responses of various managers but only of the owner-managers (entrepreneurs) of enterprises in Hungary. Data have been collected six months long between June and November 2023. At the closure of data collection, the database contained a total of 513 incomplete questionnaires, of which 229 were fully answered by the respondents, which gives a response rate of 44.64%. These 229 usable records contained the answers of 2 large enterprises', 20 medium-sized enterprises', 104 small-sized enterprises', and 103 micro-sized enterprises' leaders. Analyses in the present study apply to micro and small-sized enterprises only, therefore the records of large and medium-sized enterprises have been excluded. We therefore carried out countings with a total of 207 records' data (40.35% effective response rate). Taken into account that many studies in international literature are based on lower effective response rate (Azar & Ciabuschi, 2017; Gölgeci & Ponomarov, 2015; Parida et al., 2017; Vanhala & Ritala, 2016), we can deem this rate an acceptable one. Similarly to the ratio of the responses that can be processed, the number of records in the sample is also appropriate because when surveying people in leading positions (executives, senior-level managers, entrepreneurs), the research can be conducted from 100 respondents (Seo et al., 2014). The majority of the respondents in both size categories were born between 1961 and 1977, they started their entrepreneurial career before 2002 (micro-sized e.: 51.46%, small-sized e.: 58.65%). Micro-sized entrepreneurs established their company in their average age of 34 years, owners of small-sized businesses did it a little sooner, between 31 and 32 years of average age. Table 3 presents the composition of the sample with regard to entrepreneurs' age and education, employee number, location, and industry of the company.

Table 3: Sample Composition

| Description | Micro-sized Enterprises (n=103) | Small-sized Enterprises (n=104) |
|---|------------------------------------|------------------------------------|
| Year of Birth of Entrepreneur | | |
| Before 1961 | 21.15% | 23.30% |
| 1961-1977 | 58.65% | 54.37% |
| After 1977 | 20.19% | 22.33% |
| Highest Level of Education of Entrepreneur | | |
| higher education | 39.81% | 72.12% |
| high school | 39.81% | 21.15% |
| under high school | 20.39% | 6.73% |
| Staff Number | | |
| 0-4 employees | 42.72% | |
| 5-9 employees | 57.28% | |
| 10-29 employees | | 68.27% |
| 30-49 employees | | 31.73% |
| HQ of the Company in | | |
| Central Hungary Region | 51.46% | 36.54% |
| - of which in Budapest | 22.33% | 25.96% |
| - of which in Pest Region | 29.13% | 10.58% |
| Other Regions | 48.54% | 63.46% |
| - of which Eastern counties | 26.21% | 38.46% |
| - of which Western counties | 22.33% | 25.00% |
| HQ in below Type of Municipal | | |
| village | 16.50% | 15.38% |
| town | 47.57% | 31.73% |
| county seat | 35.92% | 52.88% |
| - of which capital | 62.17% | 49.09% |
| Industry (if over 5% together) | | |
| agriculture, forestry, fishing, wildlife management | 4.85% | 7.69% |
| construction industry | 19.42% | 16.35% |
| food industry | 0.97% | 10.58% |
| IT & communication | 7.77% | 6.73% |
| miscellaneous | 34.95% | 33.65% |
| professional, scientific, technical activities | 5.83% | 4.81% |
| shipping and logistics | 17.48% | 10.58% |
| trade | 8.74% | 9.62% |

Source: authors' construction

We apply principal component analyses (PCA) to investigate how items of each area relate to each other, and whether they stay in the same component or are mixed (Abrunhosa & Moura E Sá, 2008; Rajapathirana & Hui, 2018; Soto-Acosta et al., 2015). By using each component as a variable, we run Kruskal-Wallis nonparametric tests to verify statistically significant differences among the specific regions and size categories. Certain items in the questionnaire were reverse-coded items. It means the higher value, theoretically, is supposed to be coupled with a lower value of similar sense of item of the same area. Reverse-coded statements are also suitable for checking whether respondents took the questionnaire seriously. Mann-Whitney nonparametric test has been applied to analyse statistically significant difference among size categories in every region of the research.

Table 4: Applied Items in the Questionnaire to Measure Areas of Interest

| # | Area | Item |
|----|--|--|
| 1 | Proactiveness | You frequently scan the environment for new technologies. |
| 2 | | You constantly consider how to better exploit technologies. |
| 3 | | Compared to competitors, you are often the first to introduce new methods etc. |
| 4 | Risk-Taking | We encourage people in our company to take risks with new ideas. |
| 5 | | We value new strategies/plans even if we are not certain that they will always work. |
| 6 | | To make effective changes to our offering, we are willing to accept at least a moderate level of risk of significant losses. |
| 7 | | We seem to adopt a rather conservative view when making major decisions. * |
| 8 | | A tendency to support projects where the expected returns are certain. * |
| 9 | Operations have generally followed the "tried and true" paths. * | |
| 10 | Competitive Aggressiveness | Sacrificing profitability to gain market share. |
| 11 | | Cutting prices to increase market share. |
| 12 | | Setting prices below competition. |
| 13 | | Seeking market share position at the expense of cash flow and profitability. |
| 14 | Behaviour | We get a lot of support from managers if we want to try new ways of doing things. |
| 15 | | In our company, we tolerate individuals who do things in a different way. |
| 16 | | We are willing to try new ways of doing things and seek unusual, novel solutions. |
| 17 | | We encourage people to think and behave in original and novel ways. |
| 18 | Product | In comparison with our competitors, our company has introduced more innovative products and services during the past five years. |
| 19 | | Our new products and services are often perceived as very novel by customers. |
| 20 | | In comparison with our competitors, our company has a lower success rate in new products and services launch. * |
| 21 | Process | We are constantly improving our business processes. |
| 22 | | During the past five years, our company has developed many new management approaches. |
| 23 | | When we cannot solve a problem using conventional methods, we improvise on new methods. |
| 24 | | Our company changes production methods at a great speed in comparison with our competitors. |
| 25 | Market | In comparison with our competitors, our products' most recent marketing programme is revolutionary in the market. |
| 26 | | Our recent new products and services are only minor changes from our previous products and services. * |
| 27 | | In new product and service introductions, our company is often at the cutting edge of technology. |
| 28 | | New products and services in our company often take us up against new competitors. |

Source: authors' construction. Remark: items marked by a star (*) are reverse-coded items.

Items to measure Proactiveness have been adopted from Mamun et al. (2017, p. 248). Items to measure Risk-Taking have been adopted from Eggers et al. (2013, p. 545) and Venkatraman (1989, p. 959–960). Items to measure Competitive Aggressiveness have been adopted from Venkatraman (1989, p. 959). Items to measure Behaviour, Product, Process and Market Innovations have been adopted from Wang & Ahmed (2004, p. 307). Behaviour Innovation and Product, Process and Market Innovations are better understood as (Internal) Support of Innovation and Openness to Innovation. As mentioned above, respondents had to decide to what extent their company is characterized by each of item. Non applicable 'answer' was not an option. The higher the value of the item or the mean thereof, the more the respondent or the group of interest (region, size category etc.) is characterized by the respective item or the area in question. Therefore, for instance, a higher value of 'Competitive Aggressiveness' self evidently suggests that the company, according to the assessment of its manager, is more likely to 1) sacrifice its profitability to gain market share, 2) cut its prices to increase market share, 3) set its prices below competitors' prices and so on.

Findings

As both Kaiser-Meyer-Olkin test (KMO=0.820) and Bartlett's test of sphericity ($p < 0.001$) indicated the PCA is applicable on the input items of entrepreneurial orientation such as proactiveness, risk-taking, and competitive aggressiveness, we applied PCA on our data. The counting resulted in three components we named after their content, respectively: (1) Proactiveness & Risk-Taking, (2) Competitive Aggressiveness, and (3) Risk-Taking (REV) where REV stands for 'reverse coded'. However, the value of the item 'Risk 3' did not meet the requirement (≥ 0.50) to be highlighted in the table, therefore we have excluded 'Risk 3' from the counting and ran the analysis again without this item. Final results of entrepreneurial orientation's PCA is presented in Table 5 below.

Table 5: PCA Result on Entrepreneurial Orientation's Dimensions

| Entrepreneurial Orientation | Proactiveness & Risk-Taking | Competitive Aggressiveness | Risk-Taking (REV) |
|-----------------------------|-----------------------------|----------------------------|-------------------|
| PROA-1 | 0.816 | | |
| PROA-2 | 0.800 | | |
| PROA-3 | 0.791 | | |
| RISK-1 | 0.761 | | |
| RISK-2 | 0.584 | | |
| AGGR-3 | | 0.899 | |
| AGGR-2 | | 0.898 | |
| AGGR-4 | | 0.833 | |
| AGGR-1 | | 0.632 | |
| RISK5_rev | | | 0.868 |
| RISK6_rev | | | 0.827 |
| RISK4_rev | | | 0.807 |

Source: authors' construction. Remark: KMO = 0.796, Bartlett's test: $p < 0.001$, rotation: Varimax.

As we can see, Component 1 contained items of both proactiveness and risk-taking, while Component 2 was homogeneous consisting of competitive aggressiveness' items, and Component 3 contained risk-taking's reverse-coded items only. Items of Openness to Innovation constituted

the last part (46th to 60th item) of the questionnaire. A PCA (KMO = 0.923, Barlett's test: $p > 0.001$) on these 15 items indicated the items 'Process 1' and 'Product 3 REV' needed to be excluded from the analysis due to similar reason as above. Analysis result of Openness to Innovation items is presented in Table 6 below.

Table 6: PCA Result on Items of Openness to Innovation

| Openness to Innovation | Marketing, Product, and Process Innovation | Behaviour Innovation |
|------------------------|--|----------------------|
| MRKT-3 | 0.799 | |
| MRKT-1 | 0.775 | |
| PRDCT-1 | 0.770 | |
| PRDCT-2 | 0.732 | |
| MRKT-4 | 0.692 | |
| PRCSS-4 | 0.684 | |
| PRCSS-2 | 0.641 | |
| MRKT2_rev | 0.633 | |
| BHVR-1 | | 0.867 |
| BHVR-2 | | 0.862 |
| BHVR-4 | | 0.798 |
| BHVR-3 | | 0.726 |
| PRCSS-3 | | 0.590 |

Source: authors' construction. Remark: KMO = 0.925, Barlett's test: $p < 0.001$, rotation: Varimax.

Upon both analyses have been carried out, we used the respective Components as Variables in Kruskal-Wallis nonparametric test grouping by the Region of respondents. In this case, outputs have been previously split by size categories, too. Respective results' mean values are visualized below on the radars – Figure 1 (micro-sized enterprises) and Figure 2 (small-sized enterprises).



Figure 1: Comparison of the Regions Along the Examined Dimensions Among Micro-Sized Enterprises

Source: authors' construction.

Figure 1 indicates significant difference could be confirmed among micro-sized enterprises only in Marketing, Product, and Process Innovation ($p = 0.046$). No further significant difference was confirmed by the analysis.

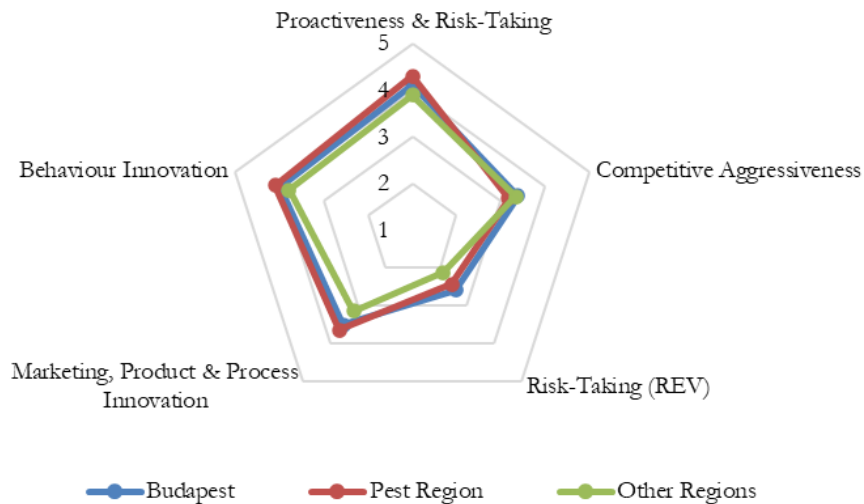


Figure 2: Comparison of the Regions Along the Examined Dimensions Among Small-Sized Enterprises

Source: Own research

According to Figure 2, the only area where statistically significant difference could be confirmed was the area of reverse-coded Risk-Taking ($p = 0.031$). Other areas did not indicate significant difference according to the analysis.

Mann-Whitney nonparametric tests verified a higher number of statistically significant differences among the respective size categories when analysing the data by Region of respondents. In Budapest, two areas have indicated statistically significant difference such as Proactiveness and Risk-Taking ($p = 0.014$) as well as Marketing, Product, and Process Innovation ($p = 0.003$) (Figure 3). Radars display mean values, while Mann-Whitney nonparametric test's Z-scores are also highlighted on the figure – in bold and red letters if significant difference was verified.

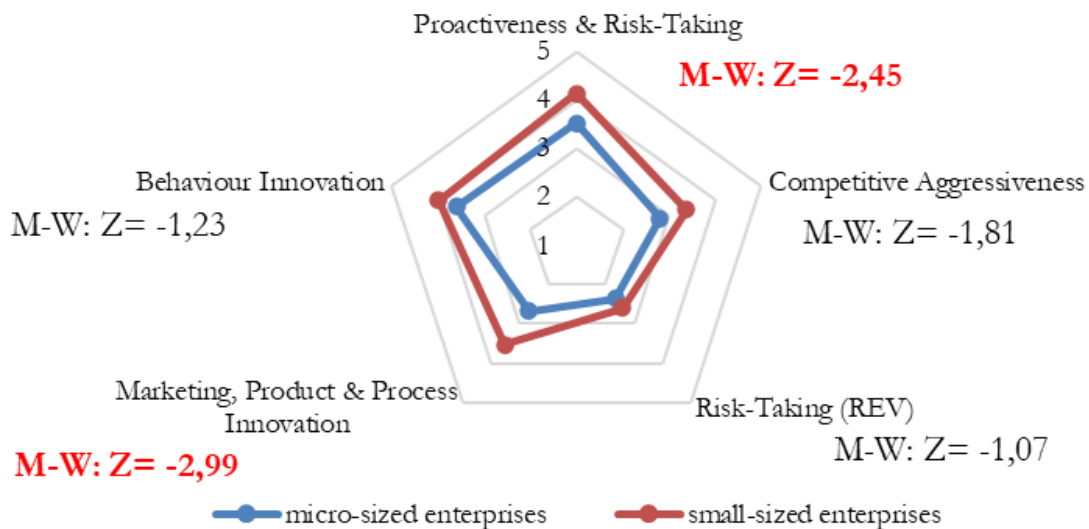


Figure 3: Comparison of Micro and Small-Sized Enterprises Located in Budapest Along the Examined Dimensions

Source: Own research

In the Pest Region, statistically significant difference was verified in three areas (Figure 4): Proactiveness and Risk-Taking ($p = 0.001$), reverse-coded Risk-Taking ($p = 0.026$), and Marketing, Product, and Process Innovation ($p < 0.001$).

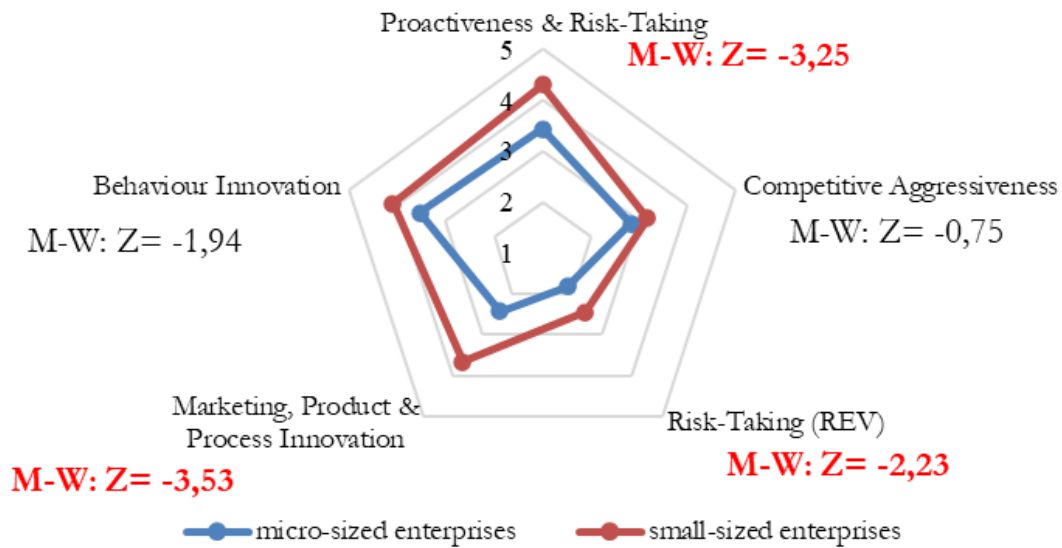


Figure 4: Comparison of Micro and Small-Sized Enterprises Located in the Pest Region Along the Examined Dimensions

Source: Own research

According to the analysis’ result, managers of small-sized enterprises in the Pest region consider their companies’ proactiveness and risk-taking as well as the openness to marketing, product and process innovation as significantly higher compared to the perception of managers of micro-sized enterprises. The two other examined areas did not indicate significant difference in the same region. In Other Regions, however, the only area that indicated significant difference by Mann-Whitney test was Competitive Aggressiveness ($p = 0.026$) (Figure 5).

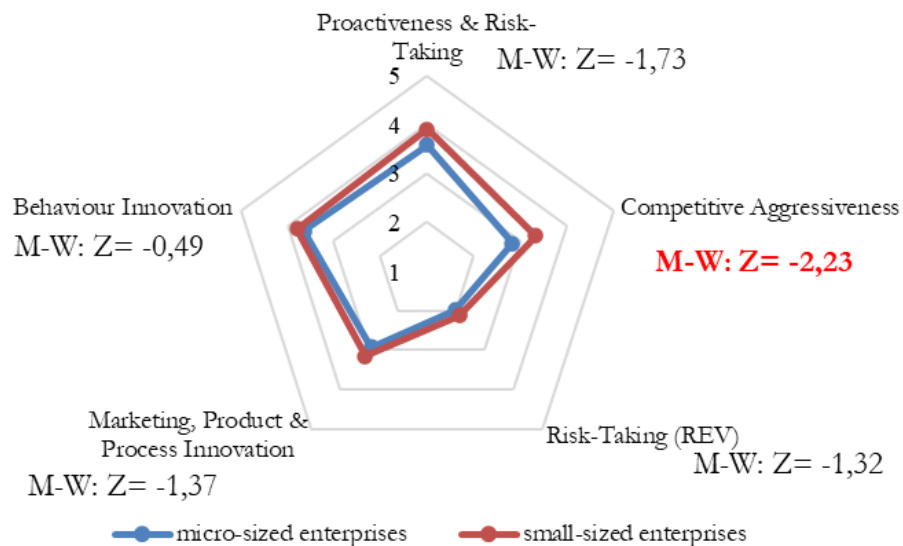


Figure 5: Comparison of Micro and Small-Sized Enterprises Located in the Other Regions Along the Examined Dimensions

Source: Own research

Compared to micro-sized enterprises, managers of small-sized enterprises perceive Competitive Aggressiveness as significantly higher, while other areas did not indicate significant difference among the two size categories.

Conclusions

Principal component analysis has indicated specific areas of entrepreneurial orientation belonged to separate components. Items of competitive aggressiveness constituted a separate, homogeneous component free from any other area's item. So did reverse-coded items of risk-taking. All three statements of proactiveness along with two items of risk-taking constituted the third component, which is in line with Lumpkin & Dess (1996) and Wang (2008), as areas of entrepreneurial orientation are distinct dimensions but, at the same time, also somewhat similar concepts. We also note, reverse-coded items of risk-taking have been adapted from different author's study than those not reverse-coded items to assess same area of entrepreneurial orientation. Additional PCA was applied involving items to measure the openness to innovation. In this case, counting resulted in two components: one consisted of items of three areas (Marketing, Product, and Process Innovation), the other contained all items measuring innovation behaviour (Wang & Ahmed, 2004). Our findings are just partly in line with those of Damanpour (1996) and Baruk (1997), as size category based on the sample processed in this study did not prove itself to be an obvious factor with regard to differences on entrepreneurial orientation and openness to innovation. However, regional comparison indicated more significant differences among size categories.

The findings of this research offer a meaningful contribution to the understanding of regional disparities in entrepreneurial orientation and innovation. They highlight specific areas where micro and small enterprises may need additional support to enhance their competitiveness. This is especially relevant for policymakers who are tasked with creating business environments that foster innovation and economic growth. The study's insights can help guide the development of regional strategies aimed at reducing disparities and improving innovation capabilities. Additionally, these findings suggest that businesses themselves can benefit by aligning their strategies with regional strengths and focusing on enhancing their innovation practices.

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