



Innovation Goals and Practices among Hungarian Small and Medium Enterprises

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Abstract: retaining competitiveness is a key goal of all small and medium enterprises (henceforth: SME), and a good tool to survive or even grow in the market is innovation. However, innovation may not occur or fail entirely if we ignore the various contributing factors inside and outside the organization. In our practical research, we wanted to find out about the opinion of enterprises concerning innovation as well as about the various innovative practices among the Hungarian firms. To support our findings, we conducted a national survey and analysis involving 814 Hungarian enterprises. With the help of our researches, we managed to prove our assumption that although enterprises find the various (Schumpeter) types of innovation useful and necessary, they fail to realize the same innovation on a level on par with their opinion. We also suggested that the businesses we examined were mostly interested in product development.

Keywords: SMEs, innovation, growth

1 Introduction

1.1 Problem of Research

The European Committee suggested the Europe 2020 strategy in 2010; the aim of that strategy was to climb out of the recession and prepare the European economy for the next decade. To achieve this, the 2020 program organized the tasks ahead along several initiatives. From the point of view of our research, the first initiative, the Innovative Union, is the most interesting, claiming that “research and development, as well as innovative policies must focus on the main challenges with the aim of ensuring that the new technological developments may yield marketable products as soon as possible.” (www.euvonal.hu)

In the innovation policy analysis of the OECD, one of the weak points of the Hungarian innovative system was claimed to be the low innovative activity of the business sector as well as the low level of patent activity. [1] Also, R+D+I pursuits are not balanced between the various regions, the number of innovative SMEs is really low, there is no mobility and cooperation, the human resources within R+D+I are not sufficient, especially concerning people with engineering and other science subjects degrees. In accordance with the international researches IMD [18] and GII [19], numerous Hungarian researchers [2] [3] judged the innovative activity of Hungarian enterprises to be weak and insufficient.

Although researching the connection between innovation and economic growth has become the most favourite topic of evolutionary economists (especially in the 1990s), the truth is that there has been no complete theoretical and empirical evidence for the connection between macro-economic and company-level growth [3]. We do not wish to attempt to create a complex model; instead, we are looking at innovation as one factors of company-level growth. The aim of our practical research is to reveal the connections between innovative goals and practices.

1.2 Research Focus

There are at least ten reasons why we need innovation [4]:

- 1) To stay in business competition,
- 2) for better returns,
- 3) for a more constant flow of innovation,
- 4) to make use of new opportunities and gain assets,
- 5) to improve disappointing performance in the past 2 decades (of U.S. firms),
- 6) to yield higher market profit,
- 7) because reducing costs is not enough in itself,
- 8) to gain competitive assets,
- 9) to raise living standards,
- 10) To ensure economic growth.

Regarding the innovation practices of enterprises, the most influential growth/SME-specific economic factors are the workforce, general and local support, competition and the local infrastructure [3] As for the infrastructure, Csath [5] called attention to the fact after the change in the regime in 1989 that although the technology and equipment we purchase from abroad is of higher quality than what we used in Hungary, they will still conserve Hungarian enterprises on a certain level, which means our technological disadvantage will increase over time.

Researchers do not agree on the relationship between competition and innovation either. Aghion and his peers [6] used the heterogeneous nature of corporate behaviour to prove that the connection between competition and innovation is inversed U-shaped, that is, competition only ensures growth up to a certain degree, after which the curve turns back and the relationship becomes negative. Aghion and his co-workers have re-developed this model several times since then. Szűcs [7] introduced the new factor of adaptation to

the relationship model of competition and innovation. This factor influences innovation through two effects. The first effect occurs when we measure the strength of the competition through product variation: as new supplementary products appear on the market, the number of companies in competition is reduced and the amount of product they can bring to the market grows (besides a reduction of profit margin). On the other hand, the specific (per product) costs of changing the product quality decrease with the increase of product quantity, which also means that the companies will be more willing to introduce product innovation. At the same time, this willingness remains only as long as companies can feel safe from the competition which might copy their technology. The decision whether to do R+D on their own or copy their competition depends on the adaptation costs, which, in turn, depend on the geographical distance of the R+D pursuits and the companies themselves as well as on the technological difference of the products. These costs are also strongly connected to product replacement. The connection is simple: if the adaptation costs are lower than the R+D costs, it is more worth copying, which also lowers the motivation to do any R+D pursuits. This is a new effect, which hinders the previous positive effect of the competition and changes it into a negative factor. (It is worth mentioning that firms often choose the copying strategy because of a lack of resource or their unwillingness to take risks.) This way, although Szűcs examines the question from a different point of view, he still justifies the Aghion-thesis concerning the U-shaped relationship.

The types of local support for SMEs can be categorized as financing, business consulting, human resource development (training), innovation, technology and technological infrastructure. Concerning these supports, Lengyel pointed out that the support demand and absorption capacity of enterprises differ according to their age. [8] Starting (beginner) enterprises are typically in an insecure position, their survival rate is low, they concentrate on staying alive instead of growing, and they require support accordingly. Growing companies do not simply require support: they also know how to use them, and owing to their labour division strategies, they are also aware what they need for continued growth and enhanced competitiveness. Developed companies, on the other hand, require special services.

It is well-known that most Hungarian small and medium-sized enterprises exist out of necessity, which means self-realization and growing is not necessarily their aim. Vecsenyi differentiated between development and growth: according to him, firms always have to develop, but not necessarily grow. Company growth may be due to the appearance of, or a change in, market demands, size thrift necessity, keeping market positions, ownership or investor's interests or the need to meet managerial demands. At the same time, not all companies want to, or even can, grow in size. [10]

Pakucs and his peers claim that company growth mainly depends on internal factors, not outside conditions. [11] Szerb used the work of several foreign authors to identify – besides demographical issues – the behaviour factors which greatly influence corporate growth: strategic growth orientation; product and technological innovation; special financial resources; entrepreneurial skills (risk-taking); realizing opportunities; management knowledge and skills. [3]

Innovation does not always succeed. Wycoff – also concentrating on internal company factors – was looking for the reasons behind failed innovation:

- 1) Not creating a *culture* that supports innovation,
- 2) not getting buy-in and *ownership* from business unit managers,
- 3) not having a widely understood, system-wide *process*,
- 4) not allocating *resources* to the process,
- 5) not tying projects to company *strategy*,
- 6) not spending enough time and energy on the *fuzzy front-end*,
- 7) not building sufficient *diversity* into the process,
- 8) not developing *criteria and metrics* in advance,
- 9) not *training and coaching* innovation teams,
- 10) not having an *idea management system*. [12]

According to the Frascati manual, innovation is “turning an idea into an either freshly marketed or updated product, into a new or updated process to be used in the industry or commerce or into a new viewpoint for a social service” [13]

Drucker identified four basic innovative strategies:

- 1) the “fastest for the best” principle – to achieve market leading position even in a new market or industry,
- 2) the “suddenly go where they are not” principle – to take a half-baked idea over and elaborate on it yourself,
- 3) the “look for a market gap and fill it” principle,
- 4) the “all-inclusive innovation” principle – to change the economic factors of a product, market or industry branch. [14]

Hax and Wilde [20] as well as Porter came to similar conclusions than Ansoff [15], who also considered being an expert in this field. Ansoff claims that – from a market point of view – natural growth can be achieved through various market and product dimensions, using development strategies based on their old or new features. In his model, he distinguished between market strengthening (market takeover), product development, market development and diversification strategies.

Today’s theory is that the best strategy is to find the “blind spots”, that is, a completely new market or product strategy which requires not only product and technology but completely new business model innovation as well [9].

A great number of businesses are forced or micro-enterprises with self-employed people or family members as helpers. These businesses settle for enough income to maintain the family, they lack resources and are typically built to cater for local demands. Coupled with the fact that – according to notable researchers – the innovative activity of Hungarian enterprises is low, it is likely that these businesses will choose product development strategies as a means to grow – if they innovate at all.

Based on our theoretical introduction, we will need to find the answers to the following questions:

- 1) How do local SMEs relate to innovation?
- 2) Why do firms do innovation and what do they expect?
- 3) What kind of innovations do companies initiate?
- 4) What kind of growth strategies do enterprises follow?

Professor Magdolna Csath conducted a national research from May 2009 to January 2011 (INNOTARS research¹), the aim of which was to “reveal and assess all factors within small and medium-sized enterprises which influence said enterprises’ innovative pursuits and, ultimately, their competitiveness” [16] Our research is connected to the questions of innovation and growth, which were already touched upon in the introduction by answering the above questions based on the results given. We used independently filled questionnaires as well as in-depth interviews during the research; in our current essay, we are presenting some of the results of the independently filled questionnaires.

According to our first claim, *although most enterprises are aware of the importance of innovation, they still refuse to follow innovative pursuits.*

Our second claim to be examined is that *the majority of the enterprises questioned are engaged in product development innovation.*

2 Primary Research

2.1 Methodology of Research

Companies could return the answers through several channels, including postage, fax, personal delivery or email.

We chose the companies through layered sampling. We sent the questionnaire to 1800 firms all together by mail or even personally; the layering factors were the region, the pursuits of the company and the number of employees. In the end, 814 of the questionnaires sent back were suitable for processing.

The questionnaire in the research consisted of five chapters (topics):

- 1) The assessment of the general information about the firms
- 2) Changes after Hungary’s EU-admission
- 3) The innovation pursuits of the company
- 4) The R+D pursuits of the company
- 5) Questions regarding market competition

We raised 32 questions in the questionnaire, 19 of which were closed (choosing answers). Most of these were yes-no questions or alternative ones (nominal scales). To

1 „An Examination of Factors Influencing and Accompanying Innovation among Local SMEs” is a research supported by the NKTH (then NIH).

get a better view of the opinions and general information of the companies, we raised 13 open (text- or explanation-required) questions. The statistical analysis was done with the SPSS 17.00 statistical program. After preparing the quantitative data for analysis (checking and correcting), we decided on how to handle any possible missing data. As we did not find it suitable to solve any such problem by, for example, supplementing the missing element by averages, in these cases, we decided to leave out any such observation unit all together. We started the analysis with descriptive statistics which were unavoidable for data processing (mathematical average, frequency), which were also used to form the basis of further analyses. We used the Pearson χ^2 (Chi square) statistical method, we did correlation and linear regression analysis and we measured the strength of the associational connections with the general Cramer V coefficient.

2.2 Results of Research

Regarding the number of companies, we know the data of 746 firms from the answers. Most of the respondents were micro-(42.6%) or small enterprises (32.7%), with a smaller number of medium-sized enterprises as well (12.8%). Some larger firms were also represented in the sample (3.6%), and 8.4% of the respondents did not give us employee numbers.

The 814 businesses operated in many areas. 2.9% represented agriculture, 14.1% worked in the processing industry, while 8.6% belonged to the construction industry. The great majority of the respondents (70.6%) operated in the service industry, and mining was represented by only one firm. 3.6% of the firms did not give us any pursuit areas.

13.0% of those questioned were located in the North-Hungarian region, with 15.6% in the Northern Great Plains, 5.0% in the Southern Great Plains, 3.8% in South-Transdanubia, 8.7% in West-Transdanubia, 9.3% in Central Transdanubia, 13.4% in Central Hungary (Pest County) and, finally, 31.2% in Budapest.

2.2.1 Analysis – First Hypothesis

Our first hypothesis to be examined is *most enterprises are aware of the importance and necessity of innovation, yet they do not implement innovation pursuits.*

The creation of the category of economic innovation theory was due to Schumpeter [17]. According to his definition, innovation is “a new combination of production factors as well as the entrepreneur who implements it.” Since then, the types of Schumpeter innovation have become classic: the creation of new products / new quality goods; the initiation of new production procedures; opening new markets; opening new acquisition sources; creating a new organization. We examined innovation in our survey according to the classic Schumpeter-typology.

First, we found out that of all innovation types, the firms find new markets (62.8%), product/service innovation (40.6%) and new acquisition sources (36.8%) to be the most important, presumably because there is a demand for these types. At the same time,

limited means and opportunities hinder the realization of these goals: only 35.6% of the firms enter into a new market while only 28.6% develop new products or services. As for realizing the importance of new technologies and the implementation of the necessary innovation, firms do both in similar numbers (21.1% and 23.1%) and almost the same number believe in, and develop, new organizational systems (10.7% and 9.9%).

As there are essential differences between the importance and the realization of innovation regarding the new market, the acquisition sources and the new products/services, we examined the differences in view between those companies who were, at the time of the research, using innovation (innovators) and those who were not; our main focus was the importance and necessity of innovation. To get the complete picture, we also asked the firms to inform us about the types of innovations they had initiated in the past 15 years. After assessing the answers, we found that there was no significant difference between the enterprises engaged in innovation at the time of the survey and the ones who had done innovation previously. Similarly the enterprises who were not engaged in any innovation during the survey were more or less the same as those who had not done so in the past 15 years. The new organizational system was deemed important and necessary by almost three times as many innovative enterprises (13.1%) than non-innovative ones (5.0%). We found no significant difference between the two groups regarding new acquisition sources; interestingly, this type of innovation was somewhat more popular among non-innovative firms. Market innovation was the most important type among both groups: more than two-third of the innovators (68%) and more than half of the non-innovators (54.9%) found it necessary and important. We found significant difference between the two groups concerning technological innovation: 13.9% of the non-innovators and 28.9%, almost twice as many innovators found this type important. As for product/service innovation, a third of the non-innovators (31.5%) and almost half of the innovators (46.5%) found it important.

Even if enterprises find innovation important and necessary, it does not mean they will also implement it. The smaller an enterprise, the less degree it will implement innovation, even though it finds innovation necessary; this is important for all types of innovation. Regarding technological and organizational innovation, more firms implement it than the number of those who find it important.

2.2.2 Analysis – Second Hypothesis

Our second hypothesis is that *of all the possible innovative types, most businesses choose product development.*

As a preliminary to this topic, we wanted to find out whether previous innovations had any relevance in the innovation process conducted at the time of the research. In the previous fifteen years, firms have mostly realized product/service and technological innovation successfully, while less attention was paid to market innovation and new acquisition sources. At the same time, innovative enterprises have often managed to achieve several types of innovation as well. There seems to be a connection between past innovative pursuits and present-day (at the time of the research) innovation. All in

all, enterprises which had done any kind of innovation in the previous years were also more likely to be engaged in some form of innovation at the time of the survey ($p < 0.001$, Cramer-type $V = 0.438$).

When asked whether a firm had an innovative strategy, 158 firms (19.4%) did not answer from the 814 total. More than half of the sample (50.2%) had some form of innovative strategy. There was a clear connection between the existence of corporate innovative strategy and employee number: the bigger a firm, the more likely it has an innovative strategy ($p < 0.001$, Cramer-type $V = 0.241$).

As for innovation, about two-thirds (62.9%) of the firms expects increased turnover from it, while a great number of them were also hoping for increased competitiveness (57.7%). Approximately half of the enterprises questioned (49.0%, 399 firms) wanted to create new partnership connections, while a similar number was waiting for greater profit (48.8%, 398 enterprises). 38.8% would have liked a reduction in cost, almost similar in number to those wishing for greater market share (38.5%). One-quarter of the businesses wanted to increase production (23.4%).

We can still define what kind of results firms expect from the various types of innovation. Product innovation is mostly chosen to increase market share and to have better competitiveness. Technological innovation is mostly expected to yield better productivity and competitiveness. Entering a new market obviously means a desire to increase market share, but finding new partners is also expected.

In our current essay, we primarily examined product and market innovation more thoroughly. Half of the businesses (50.4%) were dealing with neither innovation type of the two at the time of our research. 14.1% of the firms were doing product development, that is, they were trying to bring new products to an existing market. 14.5% of the respondents wanted to enter a new market with a new product, which hints at diversification. 20.9% of the respondents wanted to enter a new market with their already existing products.

Conclusions

We believe that innovative procedures should not only be examined in the past, but also in process, so we also paid attention to innovation which was being conducted at the time of the research. All in all, our first hypothesis was validated: even though most firms were aware of the importance and necessity of innovation, they still did not follow any innovative pursuits. Our results support the claims of international and Hungarian researches saying that the SME-sector is characterized by relatively low levels of innovative activity.

At the same time, we can also say that the examined businesses were really aware of the importance and necessity of innovation. As far as we can say, the reason why less firms do innovation than they find it necessary is the lack of opportunity and/or no or poor innovative abilities. When businesses did follow some sort of innovative pursuits, they usually also found innovation itself more important than those companies who did not innovate. An equally clear indicator of the internal problems of an enterprise is the

already proven tendency that innovative pursuits occur more frequently at firms as they grow in size. Based on the above, we have to agree with Szerb and Wycoff, who claim that the “enemies” of innovation may not only be outside factors, but also inter-organizational ones. If organizational innovation was the least frequent type at the firm during and before the research, we may even be talking about organizational blindness. Low level of innovation can be explained by the “forced” nature of the enterprise or by the fact that the management may not consist of professional or conscious businessmen.

The Schumpeter-innovation types are judged differently among the various firms. Our respondents claimed that they mostly needed market innovation, product/service innovation and new acquisition sources. The economic crisis also affected Hungary: among other things, by reducing consumption. This is a great problem for Hungarian SMEs since they mostly make products for the national market. Naturally, they need to innovate – as proven by the results of our research – but they lack the necessary resources, and they received no credit in the period we were examining (the situation has changed slightly since then).

It is a clear indicator of the questioned businesses’ desire to survive and remain dynamic that they reported ongoing innovation in a much greater number than previous innovative processes. Most of the ongoing processes are market innovations, followed by product/service innovation. Naturally, product/service innovation is often accompanied by technological changes as well. We also found a few examples of finding new acquisition sources and even organizational system innovation in a very few cases.

Businesses expect different results from different innovation types. Generally, they expect an increase of their market shares, greater competitiveness and higher profit from all types – which all hint at the importance of extra-organizational factors.

It would be a folly to choose corporate strategy or strategy type based exclusively on innovation. We do know, however, that strategy is vitally important for growth, and innovation becomes more prevalent with the rising number of employees at the firm. The smaller an enterprise, the more vulnerable it is to its environment, the more important it would be to prepare the “small ones” for all inside and outside opportunities through the right strategy. We devoted special attention to classic product/service and market innovation. As a result, our second hypothesis was not justified as businesses mostly concentrated on entering new markets of all the available innovation types, with the combination of product and market-innovation as a second option. However, innovative interests and activities typically focus on markets and products; we even found one of the two types in attached innovation. This proves to us that SMEs are market-oriented, devoted to the consumers, demand-sensitive and is doing their best to adapt to new requirements.

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