

**Szent István University**  
**Ph.D School of Management and Business Administration**

THESIS OF THE DOCTORAL (PHD) DISSERTATION

**The innovation strategies and activities of SMEs in  
the food industry in the North Hungarian region**

**Andrea Bene**

**Gödöllő**  
**2018**

Name of the doctoral school: Doctoral School of Management and Business Administration

Branch of science of the PhD school: Management & Business Administration

Head of the doctoral School: **Prof. Dr. József Lehota DSc.**  
professor, doctor of the Hungarian Academy of Sciences  
Szent István University  
Faculty of Economics and Social Sciences  
Institute of Business Sciences

Supervisor: **Prof. Dr. habil Csath Magdolna DSc.**  
professor, doctor of the Hungarian Academy of Sciences  
Szent István University  
Faculty of Economics and Social Sciences  
Institute of Regional Economics and Rural Development

---

Signature of the head of the Ph.D School

---

Signature of the supervisor

## TABLE OF CONTENTS

Table of contents.....	3
1. Research background and objectives .....	4
Background.....	4
Research objectives .....	5
Research questions .....	6
Research hypotheses .....	6
Data collection .....	7
Methods used for testing hypotheses .....	8
2. New and novel scientific results .....	9
3. Conclusions and recommendations .....	11
Summary .....	16
References .....	19
Scientific publications on the topic of the dissertation .....	19

## 1. RESEARCH BACKGROUND AND OBJECTIVES

### Background

---

Nowadays national economic policies decide on what national industries are of strategic importance while efforts are also made on sustainable development. The global strategic importance of food industry is undoubtable partly due to the constantly increasing global needs for food and the simultaneous presence of regional and ecological barriers as a consequence of the nature of food. The industry is of vital importance in improving the competitiveness of national economies.

In the past one and a half decades the domestic market share of the Hungarian food industry has significantly decreased. The industry was also characterised by a drastic decrease in revenues. The same holds true for the number of employees. Food industry predominantly consisting of micro, small and medium sized enterprises (SMEs) has suffered a lot of disadvantages in terms of competitiveness when compared to multinational companies that are bigger, more capital intensive and employ better qualified labour force that make them more productive. The Hungarian food industry has to face challenges to stop the decline typical of the industry in the past few years and reverse the unfavourable processes. An efficient instrument for improving enterprises in the food industry can be innovation but the extent of innovation, the companies' willingness of innovation and state and corporate R&D expenditure are low in the Hungarian food industry. The effective measures taken by the government that would result in a breakthrough still have to be waited. SMEs can be more competitive by eliminating their weaknesses (such as R&D, lack of expertise and managerial competences) and by means of well organised, effective cooperation. There are several opportunities of combating lack of technology and knowledge (such as corporate cooperation, cluster building, associations, open innovation etc.) that have proved their efficiency and sustainable operation in several cases for different generations and industries. As for the state, creating an environment that encourages innovation is one of the most important tasks. In a supportive environment in cooperation with other social and economic players (e.g. research centres, higher education institutions, industrial chambers etc.) and by means of consumer centred innovation strategy innovation can be made a success and the competitiveness of the SME sector as well as the entire corporate sector can be enhanced.

Examining the North Hungarian region is interesting as the peripheral regions and to show significant differences from the centre in terms of their innovation activity, networking and institutional environment so that is why special attention must be paid on creating the innovation policies of these regions (Aradóttir et al., 2005). In the North Hungarian region examining the

innovation activity of the SMEs in the food industry is of strategic importance nowadays.

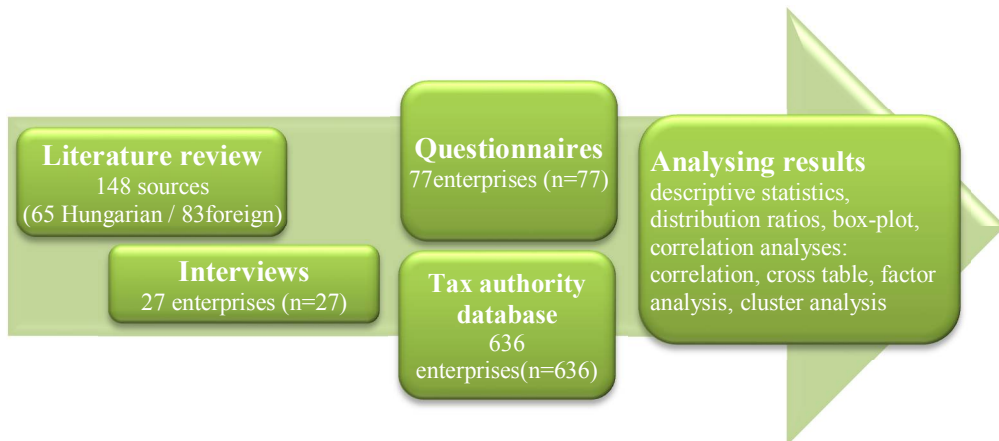
## Research objectives

### Objectives

- 1) All scientific researches are aimed at exploring the models on the working mechanisms of the external environment so it was also my objective. I would stress the importance of **the model that describes the innovation activities of SMEs in the food industry** as one of my findings.
- 2) By exploring the innovation activities of the North Hungarian SMEs in the food industry I try to contribute to **1) creating a supportive institutional background which is more effective than the current one and 2) developing regional political instruments and initiatives that better suit local needs.**

## 2. THE QUESTIONS AND METHODOLOGY OF THE EMPIRICAL RESEARCH

My research topic consists of four large areas: 1) food industry 2) SME sector, 3) innovation and 4) the North Hungarian region. My research includes four areas: 1) literature review, 2) empirical exploratory and 3) empirical causal survey and finally 4) the analysis of the results. (Figure 1)



**Figure 1 The process and means of research**

## Research questions

---

- Q1. What **type** of innovation activities are carried out by the North Hungarian SMEs in the food industry?
- Q2. What kind of (regional) impact does **market orientation** have on their innovation activities?
- Q3. To what extent do some '**internal**' **factors** influence their innovativeness?
- Q4. Is there a correlation between **innovation activity** and corporate innovation **strategy** as well as the presence of formal/informal **networks**, clusters, horizontal and vertical integrations?
- Q5. Where do SME **ideas** derive from and how is their implementation **financed** (market *versus* state sources)?
- Q6. What (state, regional, industrial, organisational, national cultural and individual) factors **hinder** their innovation activities?
- Q7. Is there a correlation between innovation strategy and performance, as well as **business success** (ROI, ROS, ROE, ROA)?

## Research hypotheses

---

**H (1)** The North Hungarian SMEs in the food industry are primarily engaged in product innovation.

*H (1a) At the North Hungarian SMEs in the food industry marketing and organisational innovation is absent.*

*H (1b) At the North Hungarian SMEs in the food industry the type of innovation is rather imitation.*

**H (2)** The innovation activity is stronger at enterprises with more qualified management of the North Hungarian SMEs in the food industry.

*H (2a) At the North Hungarian SMEs in the food industry willingness to cooperate is high in terms of innovation.*

*H (2b) The North Hungarian SMEs in the food industry obtain information for innovation primarily from their own employees.*

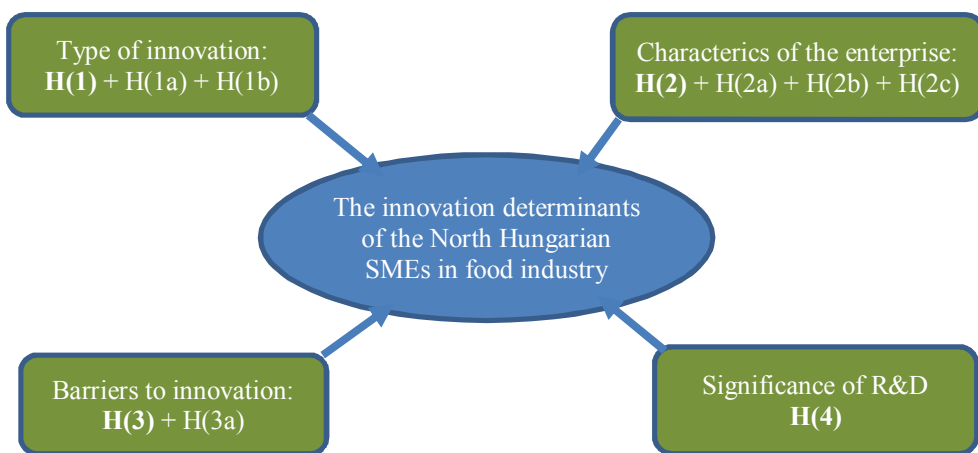
*H (2c) The North Hungarian SMEs in the food industry finance the implemented innovation primarily from their own sources.*

**H (3)** Innovation can mostly be contributed to lack of finances at the North Hungarian SMEs in the food industry.

*H (3a) The North Hungarian SMEs in the food industry cannot ensure the finances necessary for development in terms of leverage and liquidity*

**H (4)** For the North Hungarian SMEs in the food industry there was no significant correlation between the R&D expenditures and the profitability of the enterprise.

The variables identified in 4 (+6) hypotheses and correlations to be tested are summarised in Figure 2.



**Figure 2 Research hypotheses and their correlations**

### Data collection

---

My empirical research consisted of two parts. In the first phase in-depth or focus group interviews were made at the food industrial enterprises of the North Hungarian region (n=27). This part of the research was qualitative-exploratory as respondents were asked about the research questions drafted in structured and unstructured interviews. The exploratory research can be regarded non representative regarding the number of North Hungarian food enterprises but representative in terms of the size and industrial breakdown of the food enterprises of the region.

The characteristics of the innovation activities of the enterprises and the factors that decide their innovation activity were examined in more details in

the causal research. I had the opportunity to carry out my causal (causes and results) research within the framework of the New National Excellence Program of the Ministry of Human Capacities in the academic year 2016/2017. In my questionnaire six topics were examined: 1) General information 2) Management of the enterprise 3) Strategic plans 4) Innovation activity 5) Cooperation between the enterprises 6) Financial sources. In the research 77 (12.1%) of the 636 (NAV, 2015) enterprises operating in the North Hungarian region replied to the online and paper based questionnaire in 2017 by filling in all parts and providing assessable responses. The sample was proved to be representative in terms of the size, industrial rank of the enterprise and their distribution between the counties of the region.

For the analyses on the financial situation of the food industry data from the databases used as an employee of the Food Chain Research Department of the Agricultural Research Institute (AKI) were utilised. The database includes data on the balance sheet and profit and loss account of the joint stock companies in the food industry provided by the National Tax and Customs Administration (NAV) for the AKI. Data can be accessed from a public source, as well ([e-beszamolo.im.gov.hu](http://e-beszamolo.im.gov.hu)) so their use does not impede the interests of the enterprises or the industry. Typically, the analyses were carried out by using the aggregated data of the selected sector of the industry by the direction of the research.

## Methods used for testing hypotheses

**Table 1 Summary of the research methods used**

RESEARCH QUESTIONS	HYPOTHESES	USED METHODS
K1, K2	H(1)	descriptive statistical methods, ratio calculation
	H(1a)	descriptive statistical methods, ratio calculation
	H(1b)	descriptive statistical methods, ratio calculation
K3, K4, K5	H(2)	korreláció, viszonyszám számítás, keresztábra
	H(2a)	descriptive statistical methods, viszonyszámok
	H(2b)	descriptive statistical methods, viszonyszámok
	H(2c)	descriptive statistical methods, box-plot, cross table
K6	H(3)	descriptive statistical methods, factor analysis, box-plot
	H(3a)	descriptive statistical methods, factor analysis box-plot
K7	H(4)	Correlation: Pearson's coefficient calculation, factor analysis, cluster analysis



## 2. NEW AND NOVEL SCIENTIFIC RESULTS

The examinations and analyses of my research provided ground for several new and novel results.

**Table 2: The results of hypothesis, 2017**

HYPOTHESIS	RESULTS
<b>H(1) The North Hungarian SMEs in the food industry are primarily engaged in product innovation.</b> <i>H (1a) At the North Hungarian SMEs in the food industry marketing and organisational innovation is absent.</i> <i>H (1b) At the North Hungarian SMEs in the food industry the type of innovation is rather imitation</i>	√ accepted
	√ accepted
	√ accepted
<b>H(2) The innovation activity is stronger at enterprises with more qualified management of the North Hungarian SMEs in the food industry.</b> <i>H (2a) At the North Hungarian SMEs in the food industry willingness to cooperate is high in terms of innovation.</i> <i>H(2b) The North Hungarian SMEs in the food industry obtain information for innovation primarily from their own employees.</i> <i>H(2c) The North Hungarian SMEs in the food industry finance the implemented innovation primarily from their own sources.</i>	x refuted
	√ accepted
	√ / x partially accepted
	√ accepted
<b>H(3) Innovation can mostly be contributed to lack of finances at the North Hungarian SMEs in the food industry.</b> <i>H(3a) The North Hungarian SMEs in the food industry cannot ensure the finances necessary for development in terms of leverage and liquidit.</i>	√ / x partially accepted
	√ accepted
<b>H(4) For the North Hungarian SMEs in the food industry there was no significant correlation between the R&amp;D expenditures and the profitability of the enterprise.</b>	√ accepted

Source: own research, 2018

The following section describes my most important theses based on the hypotheses drafted previously:

### 1) Mean of innovation

T(1) By using descriptive statistics and distribution ratios I have concluded that the examined **North Hungarian food enterprises** were mostly engaged in updating products and launching new ones so **product innovation has been carried out in the past ten years**. These enterprises were least dealing with **introducing a new marketing tool and improving the organisation** in the examined period. Regarding **innovations implemented** mostly innovations with minor changes, less risk and costs, so the so called more cost effective developments or **imitations** without development **were present** in the past decade.

### 2) Characteristics of the enterprise

T(2) By using descriptive statistics, correlation analyses and box-plot technique I concluded that **no significant correlation could be detected between the qualification of the management of the North Hungarian food enterprises examined** (education, language knowledge) **and innovation activity** (innovation implementation, type of innovation). Typically, the examined **enterprises** have not taken part in innovation cooperation in the past ten years. Although they are aware of the positive benefits of cooperation, their **cooperation willingness is high in terms of innovation** if cooperation takes place within a predetermined, clear, transparent framework recorded in writing.

T(3) By using descriptive statistics and box-plot technique I concluded that **the source of innovation implemented by the North Hungarian food enterprises has shown differences at the various innovation types**. Ideas concerning product innovation mostly derive from the consumer while in the case of marketing and organisational innovations professionals were indicated as the source of the idea by the respondents. The **innovation** implemented in the past ten years has been financed **from the enterprise's own source**. In connection with the latter one correlation analyses proved that there was a significant correlation between the size of the enterprise and external financing according to which the smaller an enterprise is, the less likely it makes use of external sources for development.

### 3) Barrier to innovation

T(4) By using descriptive statistics and correlation analyses I concluded that at the examined **North Hungarian food enterprises innovation** was mostly **hindered by lack of finances in the past decade**, which is also justified by the fact that **the general financial situation of these enterprises**

is characterised by weak liquidity and leverage. However, correlation analyses also pointed out that different barriers depending on the type of innovation were identified as the main constraints of innovation. In the case of product innovation the external social environment (economic policy, taxation, unpredictable decisions of the state), marketing innovation the institutional background (lack of scientific information, legal background, institutional background, corruption, bureaucracy), organisational innovation the time and information factors (lack of time and market information) were said to hinder innovation most.

#### 4) Significance of R&D

T(5) By using correlation analyses I concluded that in the examined North Hungarian food enterprises there was no significant relation between the amount of R&D expenditure and profitability indicators (ROS, ROA, ROE, ROI) so the amount of R&D does not affect the profitability of the enterprise.

### 3. CONCLUSIONS AND RECOMMENDATIONS

The findings of my research are summarised in four complex topics. The structures of the four topics have already been presented when drafting the hypotheses (Figure 1) where 1) type of innovation, 2) characteristics of the enterprise, 3) barriers to innovations and 4) significance of R&D topics were marked as determinants in the innovation of the North Hungarian SMEs in the food industry

#### 3. Mean of innovation

The type of innovation carried out by the food enterprises in the North Hungarian region was to be defined by responding to three (one main and two sub) hypotheses, which were as follows:

**H (1) The North Hungarian SMEs in the food industry are primarily engaged in product innovation.**

*H (1a) At the North Hungarian SMEs in the food industry marketing and organisational innovation is absent.*

*H (1b) At the North Hungarian SMEs in the food industry the type of innovation is rather imitation.*

The results highlight that the examined enterprises have primarily been engaged in product innovation in the past ten years. Regarding the type of innovation findings show that these food enterprises have carried out minor changes of their own product or a product on the market with lower risk and cost or the introduction of a market product without development, i.e. copying and imitation. Three quarters of the enterprises have been striving to meet existing market needs and only one quarter of the respondents have implemented innovation that has generated new market needs. The results also reflect that after product innovation it was new markets and finding new solutions that were of interest for the examined companies. Respondents stated that technological novelties and creating new processes and procedures came only after the ones above.

The imitations implemented by the examined food industry entrepreneurs require much lower level of technological investment and lead to fairly quick and cost effective results Kotler (Kotler, 2016) in an interview called the attention of the enterprises to the fact that imitation is one of the most important instruments to satisfy consumers' demands as efficiently as possible in today's fast changing world. **The enterprises' quick adaptation to market circumstances is indispensable to enhance competitiveness so the strategic importance of imitation in the food industry is unquestionable by now.** However, product imitation on its own does not lead to visible results. The examined entrepreneurs did not make use of marketing and organisational innovations (or imitation of incremental nature) even if the former one also means the opportunity of market expansion and the latter one can assist in making the processes and procedures more optimal. Kotler also stresses that it is necessary for the enterprises to see innovation as a key to success by the entire organisation and innovation has to affect the overall operation: products, services, marketing, finances, etc. On the basis of the research results it **can be concluded that these enterprises do not possess enough information and knowledge to realise the correlations between the opportunities provided by the single innovation types and benefit from the profit.**

#### 4. Characteristics of the company

The innovation activity of the food enterprises in the North Hungarian region was to be defined by responding to four (one main and three sub) hypotheses, which were as follows:

**H (2) The innovation activity is stronger at enterprises with more qualified management of the North Hungarian SMEs in the food industry.**

*H (2a) At the North Hungarian SMEs in the food industry willingness to cooperate is high in terms of innovation.*

*H (2b) The North Hungarian SMEs in the food industry obtain information for innovation primarily from their own employees.*

*H (2c) The North Hungarian SMEs in the food industry finance the implemented innovation primarily from their own sources.*

During the research it was concluded that most examined enterprises have been operating for at least 14-27 years. The managers of the enterprises in the sample are rather old and half of them are above 50 (and many of them even above 60) and the management predominantly belong to the age group between 40 and 50. Regarding qualification the managers of these enterprises are typically highly educated although they have poor language skills. There was no significant correlation detected between the qualification level of the managers and their performance in innovation. **On the basis of this it can be concluded that adequate formal training (at schools) is not enough for a successful innovation, rather, there is a need for developing more special, innovation centred knowledge that can be acquired by getting acquainted with best practices and examples in many cases.** Promoting cooperation between these enterprises and other institutions may be beneficial. Results also reflected that the examined enterprises had not taken part in innovation partnerships lately but most of them thought such development cooperation was good and advantageous due to information (and knowledge) flow. Three quarters of the respondents would enter into innovation with a partner but they would stipulate strict conditions like predefined, clear, transparent written rules. **Best practices can be found in the international scenario in order to establish suitable cooperation frameworks. In connection with the cooperative association system Hungary has gained some, if not proper, practice in the past. There are best practices all over the world for the positive application of this cooperation form such as Mondragon cooperative system in Spain (Bene, 2014) where the cooperative itself establishes the knowledge base necessary for operation (ensuring own training, sources etc.).**

In connection with the characteristics of enterprises analyses resulted in further results. The examined enterprises obtain innovation ideas from different places in terms of the different innovation types. In the case of product innovation they primarily rely on consumers' demands while in marketing and organisational information it is the opinion of their own employees that counts. **In the examined enterprises external sources of ideas (such as knowledge centres, expos etc.) are not significant although**

**in the case of their own employees' opinion they cannot totally be excluded in my opinion.**

When examining financing innovation the results highlight that developments have primarily been implemented by using the examined enterprises' own resources. Based on the findings **it can be concluded that these enterprises do not possess enough knowledge or expertise to persuade partners (financial institutions, investors etc.) to implement their ideas (and finance them).**

## **5. Barrier of innovation**

The barriers of innovation for the food enterprises in the North Hungarian region were to be defined by responding to two (one main and one sub) hypotheses, which were as follows.

**H (3) Innovation can mostly be contributed to lack of finances at the North Hungarian SMEs in the food industry.**

***H (3a) The North Hungarian SMEs in the food industry cannot ensure the finances necessary for development in terms of leverage and liquidity.***

The research results have partly justified my statement according to which the greatest barrier to innovation is lack of finances for the North Hungarian food enterprises. By having 'yes' and 'no' alternatives the respondents regarded lack of money as the greatest obstacle but when several other factors as potential barriers had to be assessed the results differ from the previous yes-no responses and also in the type of innovation. In connection with product, marketing and organisational innovation the array of the potential barriers into factors made it possible to manage responses as topics by marking the most important characteristics.

In the case of **product innovation** it was the external social environment that posed the greatest barrier in implementing innovation. The factor drew attention to the problems of the unpredictable nature of economic policy, taxation and decisions by the state. All this has a significant impact on the entrepreneurial environment mostly by making general smooth operation more difficult and take away resources (money, time, attention (!), trust and energy) from the enterprise. Practically, they indirectly hinder innovation as instead of concentration on the developments the enterprises carry out extra tasks in addition to their daily routine tasks to meet economic and social expectations. **Creating an innovation friendly environment cannot wait any longer and it is timely to establish such a transparent and easily**

**manageable entrepreneurial environment that result in freeing the resources of the enterprises when implementing developments.**

In **marketing innovation** the institutional environment factor as the greatest barrier triggers other problems. Lack of scientific information, the legal environment, the institutional environment, corruption and bureaucracy allows some reflections on the assessment of the capacities, accessibility and cooperation opportunities of knowledge centres (state owned or private) by the enterprises in accordance with my experience gained during the research. The institutions that represent knowledge have not got adequate prestige with the examined enterprises which can even derive from bad experience so the knowledge transfer opportunities were not utilised. **In connection with marketing, innovation has to be reconsidered and supported by applying new and old marketing tools and speeding best practices effectively.**

In **organisational innovation** time and information factors were the greatest obstacles for the respondents. This factor marked lack of time and information. The cliché serves as the basis of my conclusion according to which 'we have time on which we want to'. The significance of organisational development was not regarded as real by the examined entrepreneurs so its slight significance does not require any time. Returning to Kotler's idea **I would recommend drawing the enterprises' attention to the significance of the fact that innovation must be regarded as the key to success by the entire enterprise so the philosophic concepts of the enterprises need to be reformed.**

The correlation analyses also pointed out that the financing factor can significantly impede innovation especially in connection with product and marketing innovation. Only it was in organisational innovation where lack of money was not marked as a significant barrier by the respondents. That is why I decided on carrying with analysing financial resources. Further analyses show that when assessing their financial situation the respondents were least satisfied with managing their enterprise. The situation of their enterprises in terms of existing sources factor (amount of salary, machinery, technological modernisation, financing investments from own sources) and the revenues (changes in revenues, taking part in projects) were regarded as adequate. Regarding management another examination also reflected that the liquidity and leverage of the examined North Hungarian food enterprises were rather weak in the examined year. This has justified the hypothesis according to which for the North Hungarian food entrepreneur there are no finances for innovation. However, the preference of the significance of finances in innovation depends on several factors on the basis of my conclusions. It is also supported by the paper of Jaruzelski and Dehoff (2007) who, when examining thousand R&D intensive international large companies, found that not the companies that spend the most money on innovation (or develop the best technologies or employ the best engineers) are the most successful on the

market. Their survey stressed that it is the consumer centred innovation strategy that is the key to market success. Although the research of the authors did not survey enterprises in the food industry **I assume that implementing innovations successfully can be enhanced by creating a consumer centred innovation strategy tailored to their general strategy and also continuously monitor their consumers' requirements.**

## 6. Significance of R&D

The quality of the connection between the profitability of the food enterprises in the North Hungarian region and the R&D expenditure was to be defined by responding to one hypothesis, which was as follows.

**H (4) For the North Hungarian SMEs in the food industry there was no significant correlation between the R&D expenditures and the profitability of the enterprise.**

The research results have justified my statement according to which there was no significant relationship between the profitability of the enterprises and its R&D expenditure. It can be concluded that R&D expenditure does not result in profitability by all means. Although the reasons were not revealed in details it can be stated that lack of organisational (management) innovation affects the efficiency of R&D expenditure, i.e. managerial issues do have an impact on the positive profit generation of R&D expenditure. On the other hand, in connection with the examined North Hungarian food enterprises it was concluded in an earlier part of the research that the developments of enterprises were rather characterised by non R&D based, incremental innovations with the nature of rather imitation. **The strategic significance of imitation is further enhanced by the fact that the necessity of R&D based innovation can be questionable in the current situation of the North Hungarian food enterprises as the radical innovations with higher cost and risk do not always result in significant performance improvement at these enterprises.**

## SUMMARY

This current PhD thesis work is elaborated basing on my investigations and professional experiences gained in the last two decades among Food and Beverage Companies in the North Hungarian Region to present my research with the background of scientifically approved methods and it's results. The first part of my study gives a clear picture about the actuality and importance of the topic, followed by the description of the different fields presented 1)



Food industry, 2) SMEs, 3) Innovation, 4) North Hungarian Region; attempting to introduce a model and contesture existing among these stakeholders, then summarizing the national and international literature available.

Having received a complex picture about the theoretical background of the examined field, I finalized my research question and concretized my hypotesis. It has been an important aim to systematize the determining factors marking the innovation focused activities of Food and Beverage Companies in the North Hungarian Region to be able to build a model in a system approach indicating the connections and correlations. The focus point of my study's expected goals I have clearly expressed and presented through the presentation of the information and databases I gained, the restricted processing methods consequently and articulately described for the readers' perceivable information. I have followed the order of my hypothesis in the research phase, so the same chronology has been used in presenting results. The main intention was to make results tracable, understandable and countenance. I have indentified hypothesis according to the list of their determining factors 1) mean of innovation, 2) characteristics of the company, 3) barrier of innovation, 4) importance of R&D, so these explained in 5 subsections: 4 hypothesis analyses and one part to verify the hypothesis.

I have cognizanced that the **variety of realized innovation** by Food and Beverage Companies in the North Hungarian Region are rather product innovation and partially marketing or organizational innovation, and looking at vertical aspect these are „imitations”. About **characteristics of the examined companies** I have come to the following relevant conclusions: 1) the educational level of company leaders has no relevant effect on the innovation achievement, 2) typically, the companies had not been involved in innovational cooperations among open market actors, but there is a will for participation, 3) depending on the variety of innovation, the inputs for development ideas are collected from the customers and the compay employees, 4) process of innovation is primarily financed from own resources. Examining the objective segment I could produce significant outcomes regarding the **barriers of innovation**: 1) inhibinting factors affecting innovation do differ, and depend on the variety of innovation (product, marketing, organization); the primer factor is not the lack of financial resources, 2) questioned companies are not in the position in the means of current ratio or ready assets to provide financial resources needed for innovation. In conclusion, about the **significance of R+D activities** within the examined companies I could state, that there is no correlation between the company's R+D expenditures and the profitability, so that R+D based innovations not necessarily lead to better business performance.

The results of my study have identified and highlighted the factors determine the Food and Beverage Companies in the North Hungarian Region need to be improved. Consequent and proposals indicate the necessary actions to be taken for improvement, forecasting a significant growth in efficiency and successfulness of the cluster of companies in the industrial segment and in the region.

These results could mean positive relevance not only in the restricted focus field of the study, but looking at the output, these can be used by companies to be established and enter the market in the future and to bring positive turn in the competitiveness of the industrial sector, the SMEs and the region. As I pointed out in the first section of my work, **Food and Beverage Industry** has a strategic relevance and importance all over the world, this industry in Hungary has a great potential to improve competitiveness, which is still not completely utilized. By today the behaviour of short value chains has become an important problem in our country, but in the field of food production (agriculture – food industry – trade and commerce), the long value chain representing solid cooperation and high level added value has a significant role primarily in the national supply, as well as through export activities and this potential has strategic relevance in economic performance. Additionally, the output of the examinational results provide remarkable development possibilities for the actors of **SME sector** too. The significance of SME sector cannot be questioned concerning employment and has a determinant role in countryside development. Through improving production and business performance this sector has strategic importance in Hungary's economic development, as the Country's performance can only be grown by increasing output of the total spectrum of companies. At last, I must emphasize as I have my roots in Eger, that now it is national interest to improve the competitiveness of **North Hungarian Region**, as 4 regions out the 20 most disadvantaged regions in the EU can be found in Hungary and North Hungarian Region is among the mostly disadvantageous.

**My main aim in this research was to accurately discover and expose the innovation activities of SMEs in Food and Beverage Industry, in favour of producing my contribution to the formation of a more effective and efficient institutional system facilitating innovation compared to today's institutes, support the background information for developing political tools and initiations that meet local needs.**

This survey has identified aims and directions for further research activities: 1) studying resource management capability and development possibilities of SMEs, 2) examining customer's demand and paying capacity in the national market to identify the means of introducing innovative / higher price level products, 3) exploring local financial asset potential (focusing on local

Life Quality index) as a basis of development possibilities, 4) regional profit increments produced by local and foreign companies. All these could serve the furtherance of economic and social changes into an expected positive direction.

## REFERENCES

1. ARADÓTTIR E. H. et al. (2005): Innovation Systems and the Periphery, Final Report January 2005: <https://www.rha.is/static/files/Rannsoknir/2005/ISP-final-report2.pdf> p. 1-438. Letöltés: 2011 május 16.
2. BENE A. (2014): A KKV-k szerveződésének szükségessége és lehetősége In: Takácsné György Katalin (szerk.) Az átalakuló, alkalmazkodó mezőgazdaság és vidék: tanulmányok: XIV. Nemzetközi Tudományos Napok: Gyöngyös, 2014. március 27-28. 1657 p. Konferencia helye, ideje: Gyöngyös, Magyarország, 2014.03.27-2014.03.28. Gyöngyös: Károly Róbert Főiskola, 2014. pp. 161-166. (ISBN:978-963-9941-76-2)
3. JARUZELSKI B. – DEHOFF K. (2007): The Customer Connection: The Global Innovation 1000. Booz Allen Hamilton.
4. KOTLER P. (2016): What Next? – The Marketing Journal, An Interview with Philip Kotler on the Future of Marketing, 15 January 2016

## SCIENTIFIC PUBLICATIONS ON THE TOPIC OF THE DISSERTATION

### *Journal articles in Hungarian:*

1. **Bene A.** (2014): Az élelmiszeripari kkv szektor versenyképességének elemzése az egyik legelmaradottabb EU régióban JOURNAL OF CENTRAL EUROPEAN GREEN INNOVATION 2:(2) pp. 27-39. (2014)

### *Journal articles in a foreign language*

1. **Bene A.** - Óhegyi K. - Csernák J. (2013): Competitiveness Analysis of the Food Processing SME-s in One of the most Disadvantaged EU Regions, in: INTERNATIONAL JOURNAL OF BUSINESS AND MANAGEMENT STUDIES 5:(1) pp. 21-30. (2013) ISSN: 1309-8047 (Online)
2. Gál R. - **Bene A.** - Óhegyi K. - Csernák J. (2013): Impact of Financial Literacy and Grain Price Volatility on the Financing Strategies of Hungarian Food Processing SMEs in: INTERNATIONAL JOURNAL OF BUSINESS AND MANAGEMENT STUDIES 5:(1) pp. 393-402. (2013) ISSN: 1309-8047 (Online)

3. Óhegyi K. - Szabó V. - **Bene A.** (2013): Identifying Opportunities to Improve Competitiveness through Innovation Illustrated on the Example of Hungary INTERNATIONAL JOURNAL OF BUSINESS AND MANAGEMENT STUDIES 5:(1) pp. 241-250. (2013) (ISSN: 1309-8047 (Online))

### *Professional publications on the research topic in Hungarian*

1. **Bene A.** - Domán Cs. - Felkai B. O. Lámfalusi I. (2016) Bene Andrea (szerk.) Az élelmiszeripar pénzügyi helyzetének vizsgálata Budapest: Agrárgazdasági Kutató Intézet (AKI), 2016. 65 p. (ISBN:978-963-491-598-0)
2. **Bene A.** – Darvasné Ördög E. – Dudás Gy. – Felkai B. O. – Garay R. – Györe D. – Kürthy Gy. – Radóczné Kocsis T. – Székelyhidi K. (2016) Kürthy Gyöngyi, Dudás Gyula, Felkai Beáta Olga (szerk.) A magyarországi élelmiszeripar helyzete és jövőképe Budapest: Agrárgazdasági Kutató Intézet (AKI), 2016. 320 p. (Agrárgazdasági Tanulmányok) (ISBN: 978-963-491-599-7)

### *Conference publications in foreign language*

1. **Bene A.** - Csernák J. – Gál R. (2013) Position and opportunities of food SME sector in North-Hungary region In: Ferencz Á (szerk.); Gazdálkodás és Menedzsment Tudományos Konferencia: Környezettudatos gazdálkodás és menedzsment. 1079 p. Konferencia helye, ideje: Kecskemét, Magyarország, 2013.09.05 Kecskemét: Kecskeméti Főiskola, 2013. pp. 660-664. I-II. kötet. (ISBN:978-615-5192-19-7 Ö) I. kötet: ISBN:978-615-5192-20-3 II: kötet: (ISBN: 978-615-5192-21-0)
2. Gál R. - **Bene A.** - Csernák J. (2013) Financing Strategy Opportunities of Hungarian Food Processing SME-s In: Ferencz Á (szerk.); Gazdálkodás és Menedzsment Tudományos Konferencia: Környezettudatos gazdálkodás és menedzsment. 1079 p. Konferencia helye, ideje: Kecskemét, Magyarország, 2013.09.05 Kecskemét: Kecskeméti Főiskola, 2013. pp. 140-144. I-II. kötet. (ISBN:978-615-5192-19-7Ö) I. kötet: ISBN:978-615-5192-20-3 II: kötet: (ISBN: 978-615-5192-21-0)
3. **Bene A.** (2013) The Connection between Innovation Activity and Human Ressources in the Hungarian SME Sector In: Balázs Judit, Székely Csaba (szerk.) A gazdasági fejlődés fő hajtóerői: innováció, hatékonyság, munkahelyteremtés : tanulmánykötet : nemzetközi tudományos konferencia a Magyar Tudomány Ünnepe alkalmából, Sopron, 2012. november 12. 1 p. Konferencia helye, ideje: Sopron, Magyarország, 2012.11.12 Sopron: Nyugat-magyarországi Egyetem Kiadó, 2013. pp. 1217-1225. (ISBN:978-963-359-000-3)

4. **Bene A.** - Gál R. - Csernák J. (2014) The Possibility of Collaboration Among SMES in One of the Most Underdeveloped EU Regions In: Csata Andrea, Fejér-Király Gergely, György Ottilia, Kassay János, Nagy Benedek, Tánczos Levente-József (szerk.) 11th Annual International Conference on Economics and Business: Challenges in the Carpathian Basin : Global Challenges, Local Answers. 1109 p. Konferencia helye, ideje: Csíkszereda, Románia, 2014.05.16-2014.05.17. Csíkszereda: Sapientia Hungarian University of Transylvania, 2014. pp.70-83. (ISBN:978-973-53-1287-9)
5. **Bene A.** (2015) An analysis of enterprises in the food processing industry from the Észak-Magyarország region In: Andrea Csata, Gergely Fejér-Király, Ottilia György, János Kassay, Benedek Nagy, Levente-József Tánczos (szerk.) 12th Annual International Conference on Economics and Business: Value changes in a transforming economy: Challenges in the Carpathian Basin. Konferencia helye, ideje: Csíkszereda, Románia, 2015.06.05-2015.06.06. Kolozsvár: Editura Risoprint, 2015. pp. 185-195. (ISBN:978-963-53-1566-5)

### *Conference publications in Hungarian*

1. **Bene A.** (2011): Az élelmiszeripari KKV-k innovációs képessége és lehetőségei In: Ferencz Árpád (szerk.) Erdei Ferenc VI. tudományos konferencia. 562 p. Konferencia helye, ideje: Kecskemét, Magyarország, 2011.08.25-2011.08.26. Kecskemét: Kecskeméti Főiskola Kertészeti Főiskolai Kar, 2011. pp. 40-45. 2. kötet. (ISBN:978 615 5192 00 5)
2. **Bene A.** (2011): A klaszterek szerepe az élelmiszeripari KKV-k innovációs tevékenységében In: Fojtik János (szerk.) Felelős marketing: MOK 2011 : a Magyar Marketing Szövetség Marketing Oktatók Klubja 17. országos konferenciája: Pécsi Tudományegyetem Közgazdaságtudományi Kar, Pécs, 2011. augusztus 29-30. : absztraktok. 974 p. Konferencia helye, ideje: Pécs, Magyarország, 2011.08.29-2011.08.30. Pécs: Pécsi Tudományegyetem Közgazdaságtudományi Kar, 2011. pp. 166-173. (ISBN:978-963-642-392-6> 978 963 642 391 9)
3. **Bene A.** – Csernák J. (2012): A klaszterek stratégiai fontosságú szerepe a KKV-k körében - Egri Borászati Klaszter példája - In: Magda S. – Dinya L. (szerk.): XIII. Nemzetközi Tudományos Napok: „Zöld gazdaság és versenyképesség?” Konferencia helye, ideje: Gyöngyös, Magyarország, 2012.03.29-2012.03.30. Károly Róbert Főiskola, 2012. pp. 1263-1268. (ISBN:978-963-9941-53-3)

4. **Bene A.** (2014): A KKV-k szerveződésének szükségessége és lehetősége In: Takácsné György Katalin (szerk.) XIV. Nemzetközi Tudományos Napok, A Tudományos Napok publikációi (CD) - 14th International Scientific Days, Papers of Scientific Days: "Az átalakuló, alkalmazkodó mezőgazdaság és vidék" - „Changing, Adapting Agriculture and Countryside”. 1657 p. Konferencia helye, ideje: Gyöngyös, Magyarország, 2014.03.27-2014.03.28. Gyöngyös: Károly Róbert Főiskola, 2014. pp. 161-166. (ISBN:978-963-9941-76-2)
5. **Bene A. – Kiss A.** (2015): A magyar élelmiszergazdaság felzárkóztatásának lehetőségei In: Ferencz Árpád (szerk.) II. Gazdálkodás és Menedzsment Tudományos Konferencia: Kecskemét, 2015. augusztus 27.: "A vidék él és élni akar". 916 p. Konferencia helye, ideje: Kecskemét, Magyarország, 2015.08.27 Kecskemét: Kecskeméti Főiskola Kertészeti Főiskolai Kar, 2015. pp. 293-297. Könyvrészlet/Konferenciaközlemény/Tudományos 1. kötet ISBN száma: 978 615 5192 33 3. - 1-490. old. 2. kötet ISBN száma: 978 615 5192 34 0. - 491-916. old.
6. **Bene A.** (2016): Az innováció és az imitáció szerepe az élelmiszeriparban In: Takácsné György Katalin (szerk.) Innovációs kihívások és lehetőségek 2014-2020 között: XV. Nemzetközi Tudományos Napok. 1704 p. Konferencia helye, ideje: Gyöngyös, Magyarország, 2016.03.30-2016.03.31. Gyöngyös: Károly Róbert Főiskola, 2016. pp. 183-190. (ISBN:978-963-9941-92-2)
7. **Bene A.** (2018): A K+F jelentősége az élelmiszeripari KKV-knál In: XVI. Nemzetközi Tudományos Napok. Előadások és poszterek tanulmányai, EKE Líceum Kiadó, Konferencia helye, ideje: Gyöngyös, Magyarország, 2018.04.12-2018.04.13. Eszterházy Károly Egyetem Gyöngyösi Campus. Megjelenés várható ideje: 2018 május (ISBN:978-615-5621-75-8)
8. **Bene A. – Óhegyi K.** (2018): A menedzsment képzettségének hatása az élelmiszeripari KKV-k innovációs aktivitására In: XVI. Nemzetközi Tudományos Napok. Előadások és poszterek tanulmányai, EKE Líceum Kiadó, Konferencia helye, ideje: Gyöngyös, Magyarország, 2018.04.12-2018.04.13. Eszterházy Károly Egyetem Gyöngyösi Campus. Megjelenés várható ideje: 2018 május (ISBN:978-615-5621-75-8)

### *Scientific books/chapters in Hungarian*

1. **Bene A.** (2011): A klaszterek szerepe az élelmiszeripari KKV-k innovációs tevékenységében, In: Fojtik J. PhD (szerk.) Felelős marketing (Magyar Marketing Szövetség Marketing Oktatók Klubja 17. országos konferenciája):

Absztrakt füzet; Konferencia helye, ideje: Sopron, Magyarország, 2011.08.29-30. Pécsi Tudományegyetem Közgazdaságtudományi Kar, 2011. p. 152. (ISBN:978-963-642-391-9)

2. **Bene A.** (2014): A KKV-k szerveződésének szükségessége és lehetősége, XIV. Nemzetközi Tudományos Napok, Előadások és poszterek összefoglalói kiadvány, Konferencia helye, ideje: Gyöngyös, Magyarország, 2014.03.27-28., Károly Róbert Főiskola, 2014. p. 219. (ISBN: 978-963-9941-75-5)
3. **Bene A.** (2018): A K+F jelentősége az élelmiszeripari KKV-knál In: XVI. Nemzetközi Tudományos Napok. Előadások és poszterek összefoglalói, Absztrakt kötet, EKE Líceum Kiadó, Konferencia helye, ideje: Gyöngyös, Magyarország, 2018.04.12-2018.04.13. Eszterházy Károly Egyetem Gyöngyösi Campus. pp. 68 (ISBN:978-615-5621-74-1)
4. **Bene A. – Óhegyi K.** (2018): A menedzsment képzettségének hatása az élelmiszeripari KKV-k innovációs aktivitására In: XVI. Nemzetközi Tudományos Napok. Előadások és poszterek összefoglalói, Absztrakt kötet, EKE Líceum Kiadó, Konferencia helye, ideje: Gyöngyös, Magyarország, 2018.04.12-2018.04.13. Eszterházy Károly Egyetem Gyöngyösi Campus. pp. 67 (ISBN:978-615-5621-74-1)

#### *Scientific books/chapters in foreign language*

1. **Bene A.** (2012): The connection between innovation activity and human resources in the Hungarian SME sector, In: NYME-KTK (szerk.) A gazdasági fejlődés fő hajtóerői (Munkahelyteremtés - Hatékonyság - Innováció): Programfüzet és előadáskivonatok, Konferencia helye, ideje: Sopron, Magyarország, 2012.11.12 Nyugat-magyarországi Egyetem Közgazdaságtudományi Kar, 2012. p. 82. (ISBN:978-963-9883-99-4)