

COMPETITIVENESS OF SMALL ENTERPRISES IN THE ONLINE SPACE AMONG THE HUNGARIAN COMPANIES

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ABSTRACT

There have been several studies about competitiveness and within this, company competitiveness. These studies include mainly the whole company spectrum in terms of company size from micro to large enterprises. There are studies which focus on large companies and the others on big and medium sized companies. There are studies which use mostly secondary data, and there is a few which use primary data. Although more studies do not take into consideration the fact that the operation mechanism and behaviour of small enterprises are different from the larger ones. Moreover, by using secondary data we are not able to look into the company, which does not ease the task of the researchers and business economics specialists. This is the reason for this study topic, which can fill a gap in the examination of enterprise competitiveness. In my analysis I focus on Hungarian small enterprises, and I do research using primary data. The research was done by a research team at University of Pécs Faculty of Business and Economics. I was also a member of this group, who analyses company competitiveness, but in my study I focused on the role of the companies in the online space. The online research of the companies was done with the co-operation of University of Pécs Faculty of Engineering and Information Technology, the result of which was integrated into the final sample. I deal with its descriptive analysis in this study.

Keywords: competitiveness, small enterprises, online presence, infocommunication

1. INTRODUCTION

The development of the Hungarian economy has been continuously a goal and now it is a goal too for the government. In the long-term economic development it is essential to keep the competitiveness in high level [7].

Of course the performance of a country can be described by many components, but among these the competitiveness indices can represent this status in a complex way. According to Ref. [4] in the past years Hungary was in 50. place in the world ranking list, in which there were some changes, but in 2018 Hungary reached better position, its result improved 5 positions, from 52. place to 47. place.

World Economic Forum found similar result, according to this Hungary was in 63. place, but in 2018 it improved 12 positions to 48. place in the competitiveness ranking [9] [10] [11].

It is obvious that there are differences between the score counting methods, but it can be declared that Hungary reached similar place, and the improvement in the ranking list refers to economic development.

In this economic development the companies get outlined role, and within this the small and medium-sized enterprises (SMEs). The productivity growth of the Hungarian companies and the strengthening of competitiveness get high priority from leading economic decision makers [5].

Thus this is apparent that this topic is relevant due to the above reasons and it is worth dealing with the role of the small enterprises in the economic development.

2. INTRODUCTION OF METHODOLOGY

In the past many studies dealt with company competitiveness. These show miscellaneous view in terms of company size. There are studies which examined the companies miscellaneously or focused on large company sector [1] [2] [3] [6]. Ref. [8] dealt with the competitiveness micro-level analysis of small enterprises, which examined especially the micro, small and medium-sized enterprises (SMEs). I analysed the competitiveness of the small enterprises along the research logic of this model.

Before going on, it is useful to determine what do we think of company competitiveness: *“The competitiveness of small enterprises is the close relation of the human capital, financing, co-operation, offered goods, administrative routines, competitive strategy, used technology, marketing, internalization and online presence. These inner competences form a system, which enables to compete efficiently with other companies and to produce goods/services which are valued highly by the customers”* [8]. It can be seen that the competitiveness of the small enterprises is a complex conception. In the final sample there were almost 800 companies, which are representatively layered in terms of company size, branch of industry and region. These companies were analysed according to a specific approach, the conceptual model of which is described in Figure 1.



Figure 1. The conceptual model of the competitiveness of the small enterprises [8]

On the Fig. 1. it is visible that competitiveness is built from pillars (e.g. human capital, financing, co-operation etc.). In order to speak about high level competitiveness, all pillars should be strong, since the logic of the model is that the pillars should be on high level to reach a high level of company competitiveness. These pillars are built from so called variables. These variables were made to help the model structure, what was put in form of thematic questions in the used questionnaire. All in all, it can be stated that the competitiveness of small enterprises was created in a complex way, taking into consideration the different factors. Among these there are hierarchical order and it makes finally the SME index, what can describe the competitiveness of the small companies (Figure 2.).

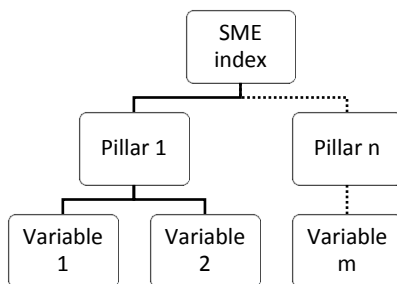


Figure 2. The hierarchical structure of the methodology of SME index [8]

The Fig. 2. has already shown the pillars of the model but I have not spoken about the variables yet. The introduction of these would be very long, this is the reason why I mention only some of these. The human capital pillar deals with human resource management, qualifications, incentive scheme. The co-operation represents types of co-operations, relations with external institutions, co-operation time etc. The complete description of the conceptual model was done by Ref. [8], this is the reason why I describe only the essence of it.

First of all, the creation and normalization of the variables and pillars were made.

$$x_{i,j} = \frac{z_{i,j}}{\max z_{i,j}} \tag{1}$$

where:

all $j= 1 \dots 10$, the number of the pillars

$x_{i,j}$ the normalized score value of the j pillar of the i company

$z_{i,j}$ the original pillar value of the j pillar of the i company

$\max z_{i,j}$ the maximum value of the j pillar

The average value of the pillars showed heterogeneous distribution, that is why it must have been equalized. For this the average of the average of the pillars was created:

$$\bar{x} = \frac{\sum_{i=1}^n x_i}{n} \tag{2}$$

In order to keep the values in [0,1] domain, the values were raised to the power of k and were weighted with themselves:

$$y_{i,j} = x_{i,j}^k \tag{3}$$

Then the value of k should have been determined in order to solve the following equation:

$$\sum_{i=1}^n x_{i,j}^k - n\bar{y}_j = 0 \tag{4}$$

Then it came the Penalty for Bottleneck principle. In this case the adjusted pillars were punished with the help of the so called penalty function according to the following:

$$h_{(i),j} = \min y_{(i),j} + (1 - e^{-(y_{(i),j} - \min y_{(i),j})}) \tag{5}$$

where

$h_{i,j}$ the modified value after the penalty in the case of the j pillar of the i company

$y_{i,j}$ normalized value in the case of the j pillar of the i company

y_{\min} the minimum value of $y_{i,j}$ in the case of the i company

$i = 1, 2, \dots, n$ = the number of the companies

$j = 1, 2, \dots, m$ = the number of the pillars

After the usage of the function the value of all pillars can be determined between 0 and 1, which shows which pillars are the weak points of the company. The higher this value is, the better. It is important to mention that disharmony between the pillars has negative impact on the competitiveness, and the weak pillars weaken the other pillars. Finally, the creation of the competitiveness score comes, which gives the SME index. This happens with the addition of the values of the 10 pillars. Then the results of the research will follow.

3. RESULTS OF THE RESEARCH

Previously it was mentioned that there were almost 800 companies in the final examined sample. Within this, the companies showed diverse picture but in this study I examined only those companies who are present somehow in the online space. As it was expected, not all the companies have online presence. This case it means 405 companies out of the 798 (51%). Classifying the companies as per the national economy sectors according to the factor that they are present in the online space, it can be stated that 10 companies (2,7%) operate in the agricultural sector, 95 companies (25,5%), in the industrial sector and 267 companies (71,8%) in the service sector. 33 companies did not give its main activity but is was a viewpoint only in the sector classification.

Classification based on the employed staff members shows that the micro enterprises (1-9 staff) takes the 48% of the examined sample, the small enterprises (10-49 staff) are present with 40%, and the middle sized companies (50-249 staff) have 12% share.

The age groups of the companies in the four categories are the following: there are 15 companies (3,7%) the age of which is between 1-3 years, 42 companies (10,4%) the age of which is between 4-7 years, 74 companies (18,3%) the age of which is between 8-12 years and finally 274 companies (67,7%) the age of which is elder than 13 years. From this point of view, it can be stated that the elder is the company the higher ratio they are present. This refers to a relative maturity.

I examined also what strengths and weaknesses the companies have in terms of human capital. Five categories were created based on college degree ratio. There have not been any staff with college degree in case of 66 companies (16,3%), the ratio of the staff with college degree was low at 78 companies (19,3%), the ratio is medium in case of 77 companies (19%), the ratio is high at 76 companies (18,8%) and the ratio is remarkably high of the staff with college degree in case of 108 companies (26,7%). From this point of view, it can be stated that there are less companies who do not have any staff with college degree. With the others the ratio is balanced except for the last category, where the ratio of the staff with college degree is remarkably high because the number of these companies is the highest.

For company internationalization the presence of foreign language speaking staff is essential. This factor was examined too and the result is the following. There is no foreign language speaking staff at 132 companies (32,6%) and there is foreign speaking staff at 273 companies (67,4%). The distribution of the foreign speaking staff is interesting. There are 57 companies (14,1%) who have one foreign speaking staff, 59 companies (14,6%) where the staff can speak two foreign languages, 84 companies (20,7%) where three or four languages are spoken and finally there are 73 companies (18%) who can use five or more foreign languages. Thus a third of the companies cannot speak any foreign languages, but a larger proportion can and the ratio is relatively high where more foreign languages are spoken.

I wanted to get answer to the question, what is the share of the foreign customers in the total customer portfolio. 274 companies (67,7%) do not have any overseas customer, while 131 companies (32,3%) have somekind of overseas customers. Among these, there are 65 companies (16%) where the share of the foreign customers is not more than 25%, 27 companies (6,7%) where this share is maximum 50%, 28 companies (6,9%) where this share is maximum 75% and there are 11 companies (2,7%) where the share of the foreign customers is more than 75%. Interesting notice is that with the companies who have online presence, the foreign language usage and overseas customers are in inverse ratio. Afterwards the examination of the competitiveness scores will follow. The Fig. 3. shows the case of those companies who have online presence.

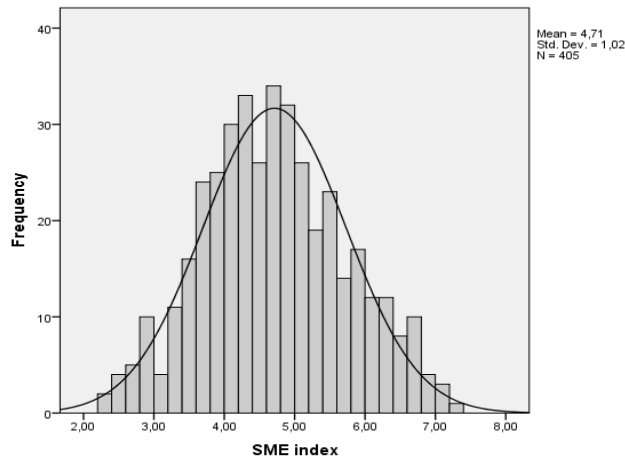


Figure 3. The distribution of competitiveness scores

From the histogram it can be read that there is symmetry with a smaller asymmetry. The average value of competitiveness scores of the companies with online presence is 4,71. It can be seen that there are little bit more companies who have lower scores this is the reason for the asymmetry. There are many companies between the scores of four and five. Then I examined the normal distribution curve of competitiveness scores, which is shown in Fig. 4.

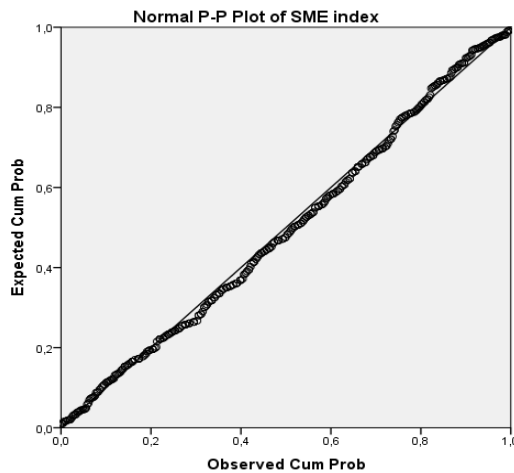


Figure 4. The normal distribution curve of competitiveness scores

A small right side asymmetry can be seen on the curve, but all in all it fits well to the normal distribution linear.

Of course all pillar values affect the competitiveness scores, although if the focus is on the online presence, the results can be seen on Fig. 5.

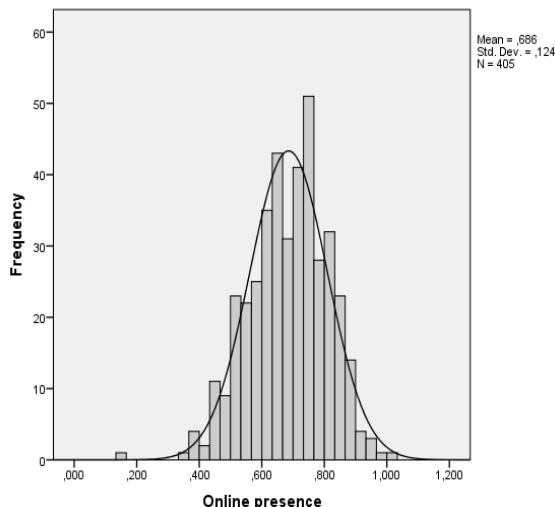


Figure 5. The distribution of online presence pillar values

The average value is 0,686 which is a higher value even if it is an average value, but if I examine the histogram more accurately, it can be seen that the results thicken between the scores of 0,7 and 0,8. This is similar to the preconception that the companies with online presence use more sophisticated online solutions during their operations.

4. SUMMARY AND CONCLUSION

In my study I drew the attention to the conception that the increase of the competitiveness of the companies can be an efficient means of economic development. However, it is not useful to generalize and it is worth thinking separately of the companies. Since there are many small enterprises a good way can be to develop the competitiveness of the small enterprises, but only if the volume is the goal this will not be enough. For this there should be qualitative development within the company. For this a good means can be the Szerb's conceptual model, the mathematical logic of which has been introduced.

From the research it turned out that around the half of the Hungarian companies are not present in the online space. Examining their economy sector operations, a little bit less than three quarters of those companies who have online presence operate in the service sector, a quarter of them in the industrial and only a few operate in the agricultural sector. In the point of view of employment, a large proportion of them are micro and small enterprises and there are a fewest from middle sized companies. Regarding their age, they have been operating for a longer time and there are relatively few younger companies among them. The company staff have relatively high qualification, and more than two thirds of them have staff who can speak at least one foreign language. It is remarkable that the human capital potential is high among these companies, but it is fact that they have no or only a few overseas customers, which means that they do not use this potential well.

Since the SME index is based on 10 pillars, all pillars influence the final value. Since the model is so complex there was no opportunity to show all of them, but it is visible that the distribution of the values is

relatively symmetric and gives values around the average. But by examining the online presence pillar more closely, it can be found out that the values are high and outstanding.

Finally, it can be stated that the Hungarian companies should develop their attitude to be present in the online space. Those who are present in the online space, can use this ability, but it is not a cure-all itself because in one hand they should use the potential of the other fields well and in other hand they should improve its weak points. Taking into consideration of these points can help the development of the competitiveness of the small enterprises.

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