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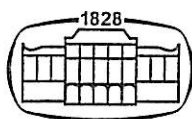
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EXAMINING THE SIGNIFICANCE OF MARKET RESEARCH IN THE CASE OF START-UPS

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Today, companies have to face new challenges because of the globalization, new technologies, globalization of markets and increasing competition. In this accelerated world, it is essential that the companies adapt to the market, which is only available through the necessary information. The importance of market research is undoubted. In our study we would like to prove that in case of a beginner company – in this case a confectionery – it is important to perform a market research like for a company in any other segment. To perform it, the qualitative market research methods were used. Our questionnaire examines several aspects in order to provide an indication of the company's founding.

Keywords: market research, start-up, qualitative research, pastry shop

Introduction

Nowadays, companies have to face new challenges due to globalisation, word-scale expansion of markets, technological innovations and increasing competition. Adaptation to the entire market in this accelerated world is essential, which can only be achieved through the availability of required information. Information is the only resource which is infinite and in principle it is available in unlimited amounts. However, it is not certain that more data actually makes one's job easier as only relevant, accurate and reliable information can help in solving the problem and providing a foundation for obtaining a realistic image in the desired field through evaluation and processing. Exploring the market and customer needs is essential for companies, which can be achieved with the tool of market research.

Our study aims to introduce the necessity and utility of market research through the example of a start-up.

State of small- and medium-sized enterprises in the European Union and Hungary

Deficiencies of adequate economic environment, typical of the 90s, still have an impact in the early 2000s. The development of the Hungarian market economy, mass establishment of small enterprises and the supporting institutional and financial background characterise this period. At the same time, problems such as lack of capital and innovation as well as strong vulnerability still exist.

Newly established and existing small and medium-sized enterprises face a number of challenges. They often lack adequate information systems and cannot employ experts with appropriate expertise and experience. These problems are significant as SMEs make up 99% of companies and close to 70% of the GDP and work places according to a 2009 statistic. The European Union therefore considers the support of SMEs an important objective, and defined the following statement accordingly: "Micro-, small- and

medium-sized enterprises make up 99% of all enterprises in the EU. There are an estimated 23 million SMEs employing close to 100 million people and they are an essential resource of entrepreneurial spirit and innovation for European business competitiveness."

The "Small enterprise regulation factsheet" emphasises that "the number of SMEs per 1,000 inhabitants in Hungary well exceeds the average 40 of the European Union as this number is 55 in this country". However, it should be noted that close to 50% of businesses operating in Hungary operate on a part-time basis. One of the decisive foundations of differences is that the number of employees in SMEs is higher but at the same time their value added production is lower in case of Hungary [4].

961,847 enterprises are registered in Hungary according to data from December 3, 2012. 99.9% of these, so a total of 960,978, are small- and medium-sized enterprises and 869 are large enterprises. Large companies are defined as ones that employ at least 250 people and their number decreased by 1.1% compared to the end of 2011.

The number of registered SMEs at the end of 2012 is as follows: 956,300 companies (99.5%) employing a maximum of 49 employees and every third small enterprise is a private enterprise employing 1 employee at most. The ratio of micro-enterprises is 96.7%. There are 31.2 thousand companies employing 10-49 people (this data fluctuated between 30 and 33 thousand since 2002). The ratio of medium-sized enterprises within SMEs is 0.5% and their number is 4678 (fluctuating between 4659 and 4979 in 2001 and 2011, except for 2009 when their number was 5,130).

Regarding ownership, 41.9% of small enterprises operate as a limited liability partnership, 38.6% as a sole proprietorship and 18% as a limited partnership, while 75% of medium-sized enterprises operate as limited liability partnership. An increasing tendency can be observed in the number of joint ventures. The ratio of limited liability partnerships, public limited companies and limited partnerships is gradually increasing. The latter is more common in case of employing fewer employees.

Regarding regional concentration 45% of small- and medium-sized enterprises operate in the central-Hungarian region and within this ratio 31% operate in Budapest.

The ratio of actual business activities in the SME sector is only 65.4%. This ratio is 64.7% among micro enterprises. This value is considered the lowest as in the case of small enterprises employing 10-49 people this value is 82.4%, and in case of medium-sized enterprises it is 98.4%.

Four-fifths of small- and medium-sized enterprises are active in the service sector according to sectoral structure, which clearly illustrates the decisive role of

the service sector. The growth in the size of the organisations is in parallel with the increase in the production sectors, such as agriculture, industry and construction. This is supported by those preliminary data of 2012 according to which more than 50% of medium-sized enterprises, 40% of businesses employing 10-49 people and 20% of micro-enterprises within the SMEs belong to one of these sectors. Regarding national economy sectors, at least 99.9% of enterprises are small and medium-sized, and the ratio of micro-enterprises performing actual business activities is over 92%. In the industry the ratio of medium-sized enterprises is the highest, thus 8.6% in the energy sector, 3.5% in the processing industry and 6.7% in the water and waste management industry.

It can be seen from the previous data that small- and medium-sized enterprises have a significant effect on the Hungarian economic performance, playing a major role in employment and in the new economic structure.

The recorded revenues based on preliminary data for 2012 are a good indication of that. 58.3% of realised revenues by businesses operating in Hungary can be linked to the SME sector. Revenues achieved by them according to economic sectors are as follows: over 60% in the tertiary sector, 40% within this is vehicle repair and commerce, 17% in the processing industry. This ratio was around 60% between 2001 and 2009 – except for two years – which has decreased to 58%–59% since 2010.

Regarding the gross added value, the share of the SME sector has not decreased; it has been 55% since 2007 (55.25% in 2012). Two-thirds of the added value has been produced in the service sector, 20% in vehicle repair and commerce, 21% in the processing industry and 10% in the technical, professional and scientific activities.

Business survival is low among small- and medium-sized enterprises. Close to 60 thousand new SMEs started their operations in 2006, but only 40.1% were still in operation in 2011. Enterprises employing 10-49 people had the lowest rate of survival; 39.6% of those established in 2006 were still in operation in 2011. Micro-enterprises, making up 98.5% of SMEs, had a survival rate of 40.1%. 36 out of the 75 medium-sized enterprises established in 2006 were still in operation in 2011. Business survival of small- and medium-sized enterprises is significantly influenced by the nature of their activities.

Based on HCSO data it is clear that the lifespan of enterprises has been continuously decreasing since 2006. Therefore, it is important to have adequate information and data when starting a business in order to ensure long-term operation. One of the tools for exploring market and customer needs is market research.

Market research

A number of references deal with the concept of market research in related literature and provide different definitions. There is a comprehensive definition that provides the best explanation of what market research really is. According to Malhotra (2001), "Market research is the function that connects the consumer, the customer and the publicity with producers, distributors through such information that are aimed at identifying marketing problems and possibilities." The aim of market research is to collect such data, which provide information about the examined area. In order to do so, it determines the methods of data collection, it gathers and evaluates data as well as making suggestions for their use. All these are performed in the interest of satisfying customer needs at the highest possible standard. Survival and success of an enterprise in the current economic situation is determined by how dynamically it can adapt to more changing and increasing consumer demands [5].

Market research can be done for a number of reasons. The most common case of market research is when an answer is required for a specific problem or issue. Information can be obtained from the research results to solve the problem or issue. We can also prepare market research to assess demand, when launching a new service or product or determining the optimal price. Research can also help in identifying the target group of companies and therefore the type of advertising as well. It is important for enterprises to have clear and precisely defined objectives. Research type can be defined accordingly after defining specific objectives [8].

Significance of market research for start-ups

Companies spent a total of 19 billion US dollars on market research worldwide in 2005. The market re-

search in the 10 EU accession countries of 2004 expanded by 12%, making it more dynamic than the 2.7% "global average" [1]. According to Menon and Varadarajan (1992), managers hardly rely on available market information. Applying available information in managerial decision making is not only important to learn and recognise wider connections, but also because obtaining these is a significant financial burden on companies and it is essential for competitiveness as well. According to Zaltman and Deshpandé (2000), competitors can access similar data and information, therefore interpreting, putting these into context and applying them is increasingly becoming a key element of competitiveness in the market [9].

While market research as a subject is taught in almost all business schools and universities as an individual subject, there is much less information available regarding the extent to which companies apply this tool in practice to learn about their environment. A research was carried out in 2007 to examine how frequently companies use market research methods in Hungary. The research was based on database supported by the OTKA. The database contains the opinions of the 572 managers and represents companies employing over 20 people according to sectors [3].

The research examined the role of market research in the marketing information system with the help of a five-level Likert-scale. The results showed that half of Hungarian companies never, while one-third only rarely use market research methods.

At the same time, they could identify a smaller group, 15% of the companies, which consider market research important for learning about their environment. Furthermore, the variables measured on a nominal scale determining the differences in the use of market research were also examined by applying an ANOVA variance analysis. According to the results, companies active in the consumer (consumer electronic market – B2C) market relied more frequently on market research than the average. Companies in-

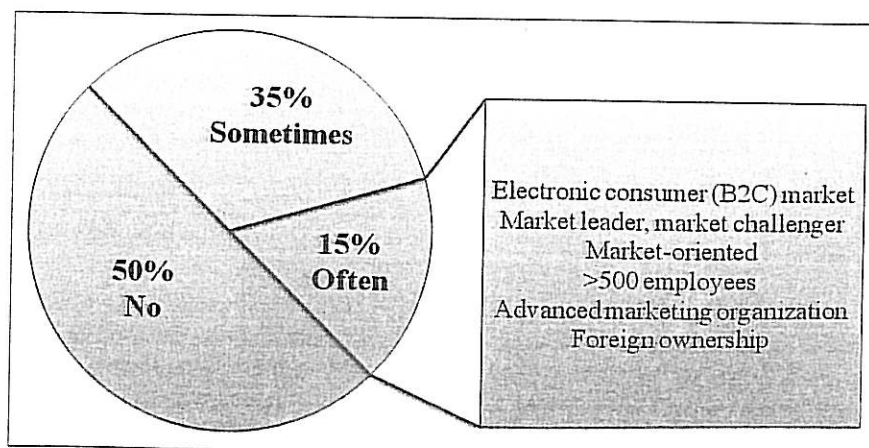


Fig. 1. Frequency of market research by Hungarian companies (Source: [3])

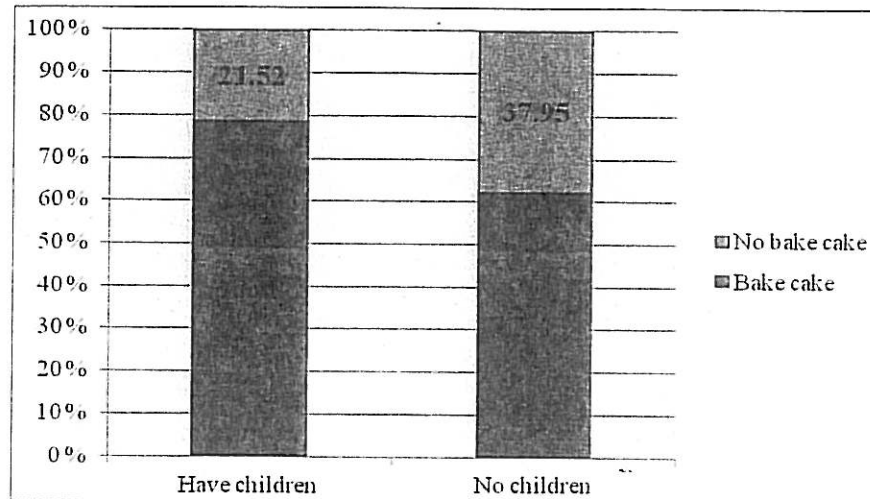


Fig. 2. The link between making cakes and having/not having children (Source: own compilation)

involved in producing consumer services regard market research methods more important than the average. Companies involved in producing mass consumer products (Fast Moving Consumer Goods – FMCG) and consumer durables also belong to this category. Results obtained through the examination of industrial sectors show that communication, telecommunication and wholesale companies have market research done significantly more frequently [3].

Market research in the current economic competitive environment has been appreciated. As Zaltman explained it, “the competitiveness of companies in the future will not depend on how much information they have but on how they will exploit it”. Market information and its appropriate use can be converted into economic advantages in the life of companies [9].

Results of market research in the case of a start-up pastry shop

A venture in Hungary recognised that it is worth assessing consumer demands and expectations prior to

entering the market. Therefore, it requested market research from the authors of the paper.

There are 250 people in the sample. 1/3 of them are male, and 2/3 of them are female. The average age in the sample is 30 (deviation: 8.5 years), the minimum age was 19, while the maximum age was 63. Age distribution showed normal distribution in the sample based on the ANOVA assessment, namely the average age of males and females did not differ from each other significantly. Average age among women was 28.9, while among males it was 30.6. 1/3 of the people in the sample have children, while 2/3 do not.

Below are the results from the assessments of the cross tables, which show those most important interactions that will provide the foundation for creating the multivariable ANOVA models.

First, we examined whether families with or without children make cakes or not, which is shown in Fig. 2. 78.48% of families with children do, while 21.52% do not make cakes. 62.05% of families without children make, while 37.95% do not make cakes. It can be stated that there were more families involved

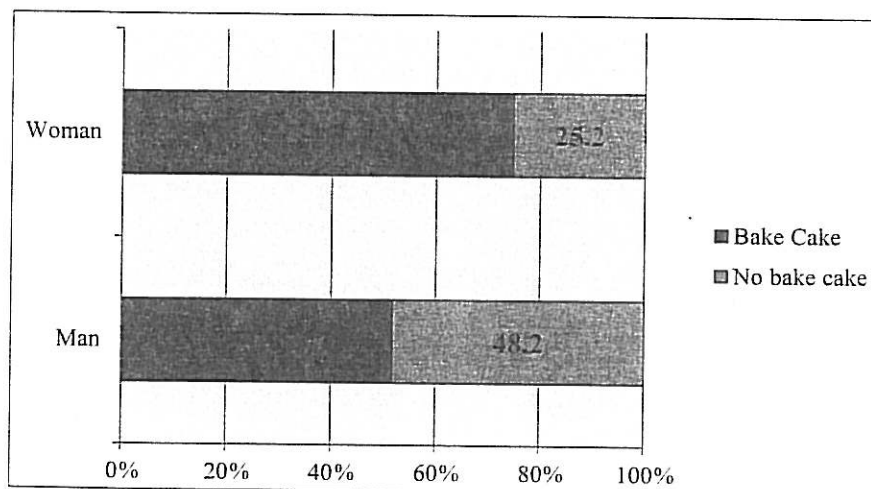


Fig. 3. Links between gender and making cakes (Source: own compilation)

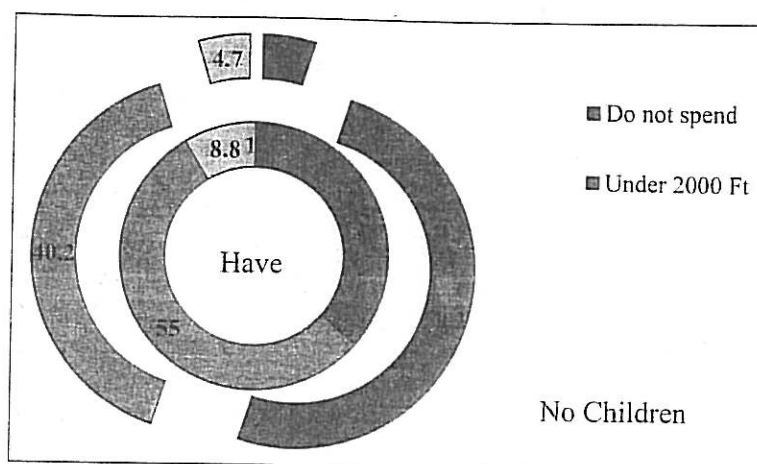


Fig. 4. The link between the amounts spent on sweets with having/not-having children in the family (Source: own compilation)

in the survey that make cakes at home regardless of having children based on the results. The differences proved to be statistically significant as well through Chi-square test ($\chi^2 = 6.573$; $p = 0.010$).

We also examined whether there is a link between gender and making cakes, which is shown in Fig. 3. The results show that there is an obvious interaction between gender and making cakes as women bake cakes more often (75%) than men (52%). There was a significant difference between the two factors based on the Chi-square test ($\chi^2 = 13.218$; $p < 0.001$). The differences proved to be statistically significant between making cakes and gender as well during the ANOVA assessment ($F = 3.85$, $p = 0.050$). The average age of those making cakes was 30.8, while the average age of those who do not was 28.6.

Then we examined whether there is a link between having children and the amounts spent on sweets, which is shown in Fig. 4. 45–45% of the interviewed families with children and without children spend an average of less than 2000 HUF and between 2000 and 5000 HUF on sweets while 6% spend over 5000 HUF on sweets. 4% of the families do not spend on sweets at all. According to the table, families with children spend larger amounts on sweets than families without children. This can also be seen from the fact that the ratio of those who do not spend is relatively higher in the case of families without children and a relatively larger ratio of families with children belong to the two highest spending categories – 2000–5000 HUF; over 5000 HUF. The Chi-square test showed a significant difference between the two factors ($\chi^2 = 8.707$; $p = 0.033$).

We applied principal component analysis for our further evaluations. The aim of principal component is to reveal those background variables that influence variables by combining the variables that are correlated with each other into one common principal component, which are already independent from each other

(Székelyi, Barna 2002). One main advantage of their application is that the database can be examined with a lower number of variables instead of a given number of explanatory variables. In the case of principal component analysis we explain the total variance of variables and the aim is information reduction. The principal components are such variables that are suitable for variance analysis as the generated principal components become normal distribution.

Respondents had to assess 13 factors on a 5-point Likert-scale regarding how important a given factor is for them in connection with the pastry shop and its products. 4 principal components were formed from the 13 aspects. Principal component analysis requires the number of observations to be 3–10 times more than the number of variables. The sample contained 250 valid observations, from which this aspect is more than enough, as there were nearly 20 observations for each variable. We could preserve the majority of the information during the principal component analysis; the principal components preserved 70.58% information amount during the 4-component solution. An essential step of the analysis is to estimate principal component weights based on the observed values of the original variables. The principal weights of principal components show the degree to which one principal component influences the same variable. The weights of principal components are given in a matrix arrangement. A common practice is that variables with an absolute weight value of ± 0.70 or higher is considered to belong to one principal component, while variables with an absolute weight value of less than 0.70 are not identified with the examined principal component (Szűcs, 2002). However, several references in literature also assign the variable above 0.5 values to the principal component [3].

Standard principal component analysis (PCA) often does not show representative results on Likert-scale data, especially when there is a low number of

Table 1. Introduction of principal component weights in case of a 4-dimensional solution

Factor	1. Design	2. Delivery/order	3. Accessibility	4. Price
Customised cake	0.867			
Design	0.750			
Knowing the owner	0.634			
Online order		0.810		
Webpage		0.766		
Home delivery		0.561		
Personal consultation			0.748	
Quality			0.729	
Accessibility of pastry shop			0.684	
Price				0.931

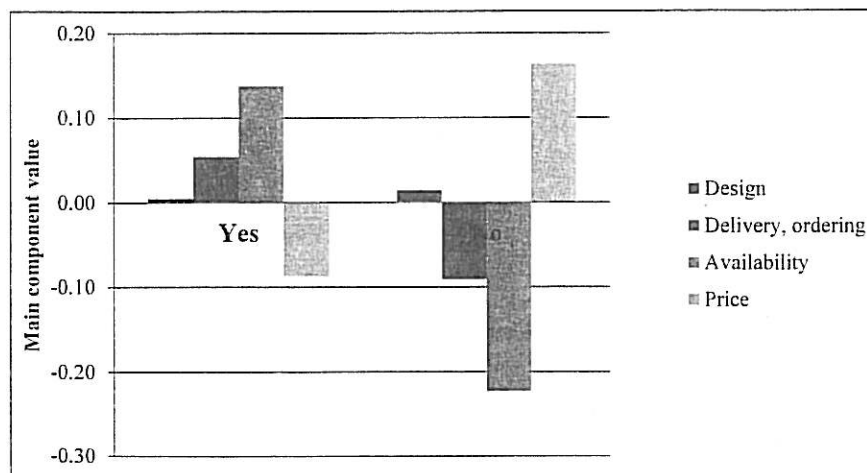
Note: The weights of principal components can be interpreted similarly as the correlation coefficients
(Source: own compilation)

observed subjects or the assessment is run on many variables. Optimised scaling for categorised data provides an acceptable solution to avoid these problems. Principal component analysis was performed by using the categorised PCA model (CATPCA) applying the SPSS 17.0 software. Firstly, CATPCA rescales the categorised data to a numerical variable applying the optimal scaling method, then performs a reduction on the number of variables in the data as described above similarly to standard PCA (Linting et al., 2007). Optimised scaling assigns numerical values for each category. These optimally scaled values can be used during PCA assessment as it gives metric characteristics for the given variable. The values are assigned during an iterative method, the so-called ALS – Alternating Least Squares to the categories. Different measurement level – nominal and ordinal level as well – variables can also be included in the CATPCA assessment without any preliminary restrictions. The relevance of the analysis and the internal reliability of questions are tested by the Chronbach-alpha coefficient, which gave

an excellent value of 0.947. Four principal components were formed, which are shown in Table 1.

The first principal component is design, which is paired with knowing the owner. The second dimension is the importance of online order, home delivery and webpage of the pastry shop, namely the dimension of home delivery and online order. Accessibility is the third dimension, personal consultation, which is linked to quality. Price makes up the fourth dimension independently. It can be concluded from the obtained results that design, price and quality make up an entirely independent dimension.

In the following section, the development of principal component values are presented based on certain group forming attributes (gender, having children, making cakes and expenditure on sweets). A principal component value is formed for each respondent by applying the above mentioned weights according to what values are given by the respondent for the factors belonging to the principal component. The principal components are 0 expected value and 1 standard deviation.

**Fig. 5.** Development of principal component values based on baking cakes (Source: own compilation)

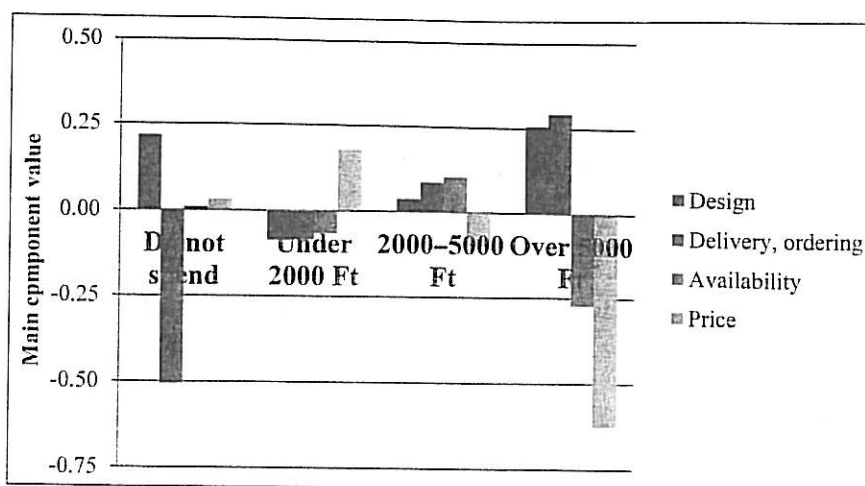


Fig. 6. Development of principal components based on expenditure on sweets (Source: own compilation)

ation normal distribution variables. The 0 value marks the situation when the specific factors are considered important according to the sample average by the respondents. The value of the principal component can change between +1 and -1 depending on what weight the factors belonging to a principal component represent and what assessment they received. Factors belonging with positive weight to the principal component increase the value of the main component if these were considered relatively important by the respondents. These make up the positive pole of the principal components. Negative weight factors make up the negative pole of the principle component. These factors decrease the value of the main component, if the respondents give higher than average value to them. Principal components are more illustrative for assessing which attitudes are regarded relatively important or less important by the respondents.

It can be concluded based on Fig. 6 that those who bake cakes consider accessibility/quality more impor-

tant than those who do not bake cakes. Differences regarding price were only detectable at 10% significance level during *t*-probe ($F = 3.479$; $p = 0.063$) while regarding accessibility/quality difference was detectable at 5% level ($t = 2.505$; $p = 0.013$). Welch-type test had to be used for accessibility/quality, as the conformity of the deviations were different in two groups ($F = 6.848$; $p = 0.009$). None of the tests showed significant differences in other factors.

Figure 6 shows the development of principle values based on the amounts spent on sweets. Statistically significant difference could be detected for the entire sample regarding price by using ANOVA assessment ($F = 3.625$; $p = 0.014$). Examining the differences among categories according to pairs, the LSD post-hoc test (Least Square Difference, namely the lowest square differences) we found that the category under 2000 HUF differed significantly from the 2000–5000 HUF and the over 5000 HUF category ($p = 0.036$ – 0.003). It can be seen that price is more important for

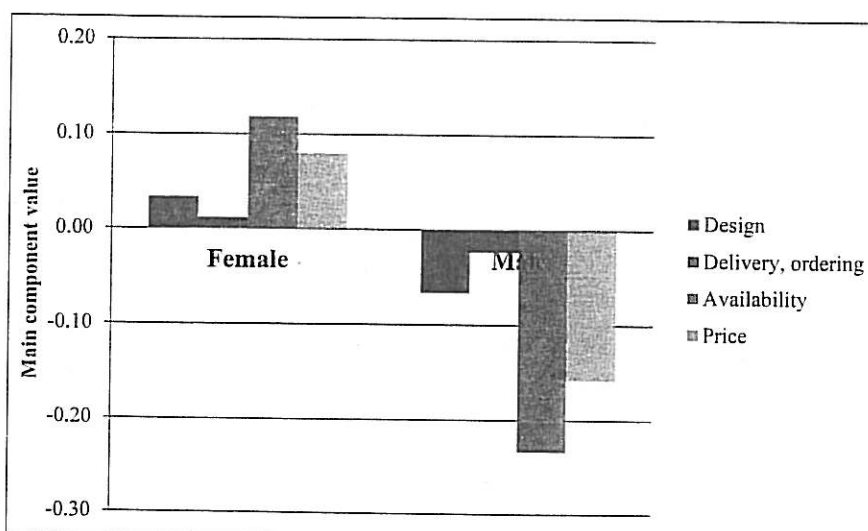


Fig. 7. Development of principle component values according to gender groups (Source: own compilation)

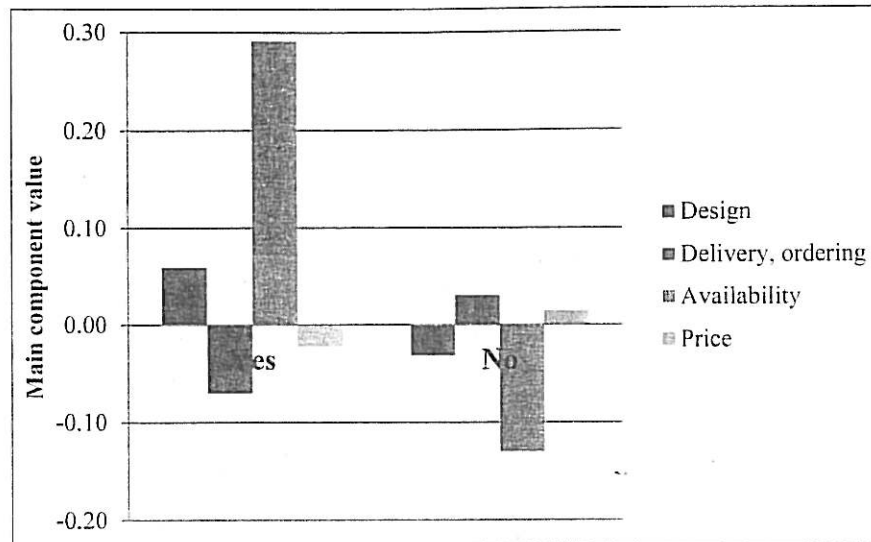


Fig. 8. Development of principle components according to having/not having children in the family (Source: own compilation)

those who spend less on sweets (under 2000 HUF group). Significant difference between the importance of home delivery and online order could only be detected between the groups of “non-spenders” and the group that spends over 5000 HUF ($p = 0.050$), but there was no difference regarding the entire sample. Home delivery and online order are more important factors for the group that spends over 5000 HUF.

Figure 7 shows the development of principle components based on the amounts spent on sweets. Women assessed the examined dimensions completely opposite to men. However, significant difference could only be detected regarding accessibility (5% significance level: $p = 0.008$) and the price (10% significance level: $p = 0.075$). The obtained results show that accessibility is more important for women than price, than in the case of men. There were no significant differences in the other two factors. We applied a t -test to reveal differences.

Figure 8 shows the development of principle components according to having or not having chil-

dren in the family. Significant differences were found in the importance of accessibility and quality between those who have and those who do not have children based on the t -test ($t = 3.168$; $p = 0.002$) at 5% significance level. There were no significant differences in the other factors regarding children.

The link of the age factor with other dimensions was examined using the Pearson correlation coefficient. We found a weak link between accessibility/quality and age ($r = 0.195$; $p = 0.002$). All these mean that personal consultation, accessibility of the pastry shop and quality become relatively more important with advancing age. It can be concluded based on preliminary examinations that group forming attributes affect separately in two dimensions; in price and the accessibility/quality of the pastry shop.

We carried out a more detailed assessment of the dimensions that developed during the principle component analysis and performed a multi-factorial ANOVA analysis. The aim was to find an answer to how the links of certain variables, or so-called interactions,

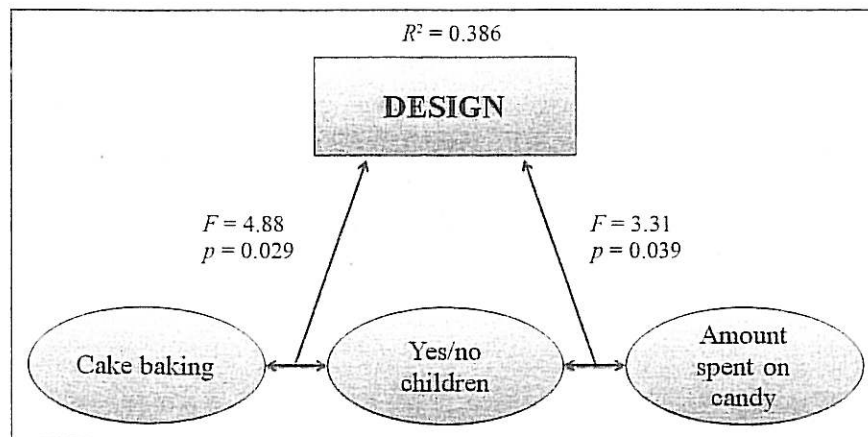


Fig. 9. Multi-factorial ANOVA model developed for the design dimension (Source: own compilation)

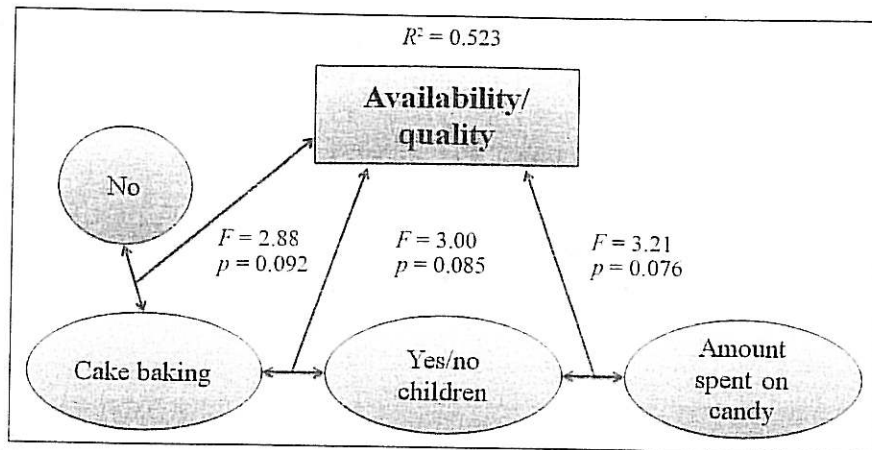


Fig. 10. Multi-factorial ANOVA model developed for the accessibility/quality dimension (Source: own compilation)

influence individual dimensions. We illustrated the results in a graphic form.

It can be concluded based on the model illustrated in Fig. 9 that there is a link between having children in the family, baking cakes and the amount spent on sweets. These jointly determine how important design is. Design is more important for families with children (where cakes are baked and more is spent on sweets) than for those who do not have children or have but do not bake cakes or spend less on sweets.

Figure 10 shows the links in the accessibility/quality dimension developed based on multi-factorial ANOVA model. It can be seen that quality and the accessibility of the pastry shop is important for those who bake cakes, as well as personal consultation. However, women bake cakes more often, therefore they form the group that regards these more important. Accessibility of the pastry shop and quality is more important for families with children than for those without children or for those who have but do not bake cakes.

Figure 11 shows the link that price is less important in the two highest amount categories (2000–5000

HUF and over 5000 HUF) than for those who do not spend or spend less than 2000 HUF on sweets. The figure also reveals the link that those who do not bake cakes (there are more from the younger age groups) consider price to be more important than those who bake cakes.

Summary

Market survey and the analysis of involved parties and demands is important for a start-up in order to be able to find a gap in the market as well as to satisfy demands of potential consumers and to become competitive in the market. Market analysis and assessment are required to do so and market research is a possible method for achieving this. This study was aimed at proving that a start-up, a pastry shop in this specific case, requires market research just as much as any company involved in any other sector. We applied qualitative method for doing the market research. The survey examined many aspects in order to provide references for company founding and identifying the target market. 250 people filled in the questionnaire, with

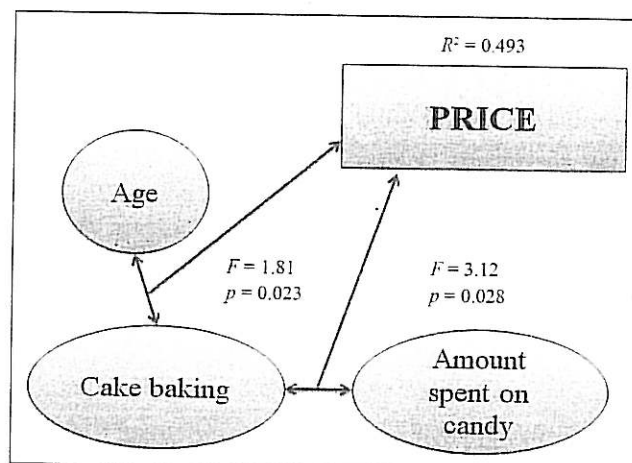


Fig. 11. Multi-factorial ANOVA model developed for the price dimension (Source: own compilation)

a wide spectrum of age regarding the respondents. The examined sample gave an objective picture for the successful launch of an enterprise.

Results of the questionnaire were first examined using ANOVA assessment, which is a single factor standard deviation analysis. This gave the result that women bake cakes more often than men and those families who have one or more children spend higher amounts on sweets or cakes.

Principle component analysis was performed in order to get a more differentiated examination of the results, which enabled us to form independent dimensions. We could separate four dimensions from each other during the principle component analysis: design, home delivery/online order, accessibility and price. It was concluded that accessibility, quality and price are important for those who bake cake. Home delivery and order method are important to those who spend over 5000 HUF according to a separate analysis for price. Accessibility of the pastry shop and price is more important to women than to men. The importance of accessibility and quality was also present in case of families with children. These factors are much more important to them than to those without children.

During the correlation analysis we received the result that personal consultation, accessibility of the pastry shop and quality become more important with advancing age.

The principle components were also examined using the ANOVA analysis in order to reveal additional links. Based on the results, it can be stated that design is more important to families with children while

those who bake cakes regard quality, personal consultation and accessibility of the pastry shop to be more important. Based on the results, it can be stated that companies need to put emphasis on establishing and maintaining a suitable target market as families with or without children have different demands regarding pastry shops. Quality, price and accessibility play an important role from all aspects in company sustainability.

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