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AGRICULTURE AND LIFE SCIENCES

*Sustainability-orientation and Integrated Marketing-communications in
the Hungarian SME sector*

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1. INTRODUCTION

In the 21st Century, the fundamental questions of our society and economic system are the sustainability of the future, the scope of opportunities, the tasks that we must perform in order to be able to maintain our established systems in the future, and the sources of danger that may adversely affect all of these. The crisis situations experienced in recent years brought new and innovative difficulties to the life of humanity and highlighted the significant risk in the economic systems, which revolves around the issue of adaptation: a risk can occur at any time that could endanger the BAU (Business As Usual) operation. The question then arises as to whether societies and economies in such cases are able to show the resilience that is essential to averting the danger. This is a particularly important question for the small and medium-sized enterprises' (SME) sector within our economy, as these enterprises are extremely important for our economies.

In the SME sector, there is a constant need for renewal in terms of increasing opportunities and performance. In general, the sector provides the backbone of national economies in the countries of the World, however, on the other hand, the market is shared by many more companies compared to the sectors of multinational companies, state service companies that enjoy a monopoly position, and other companies. As a result, the competition in these markets is sharper, access to funds is more difficult, and the range of customers available to individual companies and their competitors is narrower and their fragmentation is stronger. In the SME sector, the dangers and challenges are also more difficult, since their small size does not provide protection against many environmental effects, as can be said about large enterprises. On the other hand, due to their size, by using the right tools and investing in opportunities, they may be able to overcome these obstacles more successfully.

According to most forecasts, small and medium-sized enterprises worldwide will face increasing compliance pressures in the coming times. This challenge makes it important to deal with the conditions for taking advantage of the opportunities open to them, and to make the tools and opportunities at their disposal as easily accessible as possible. A strong SME sector results in a strong economy, indirectly, and directly. And a strong economy will be just as important in the future as it is now, since the competition between nations, their groups and societies and economies is expected to intensify in the future. We can support the SME sector in this competition not only economically, but also prepare its tools for the competition.

1.1. Topic background and actuality

In my thesis, I would like to examine integrated marketing-communications in the 21st Century, its role and position in the management of sustainability-oriented Hungarian SMEs. The importance of the topic is manifold – by the turn of the Century, the importance of sustainability is constantly increasing in many aspects. (Brorström, 2023). While the world is facing more and more challenges that increase the need for adaptation and the application of alternative solutions, it is increasingly noticeable that sustainability is suitable for dealing with the difficulties of the future. (Henderson – Moreau, 2023) Nowadays, sustainability has come into the public awareness primarily through the

pillars: the three main sustainability perspectives are nature protection, economic rationality, and social fairness. These three pillars cannot be interpreted completely separately from each other, they can only be thought of together, in one system. (Hansmann et al. 2012)

The most frequently mentioned sustainability pillar is the nature protection pillar. The basic interest of our society is to protect the treasures and values of our environment for future generations in the face of changes and challenges, which the current society is gradually recognizing. (Acosta-Alvarado – Rivas-Ramírez, 2018) In the current development of society, new and new challenges to the pillar of nature protection arise more and more frequently, which must be solved with increasing urgency, and will gradually become more and more complicated, due to complex interrelationships. The goal is to provide successful responses to challenges and to take on future challenges and difficulties as effectively as possible. (Arora et al. 2018) The main challenge for the nature conservation pillar of sustainability is currently climate change and its effects. The most significant danger and most important challenge of climate change is the extinction of species. Climate change in itself is dangerous for biodiversity, but its consequences further increase the negative effects that eventually lead to the disappearance of entire species worldwide. (Urban, 2015) It is a serious task for humanity to balance the environmental protection aspect of sustainability with the other aspects, which can primarily be achieved by assigning economic values to environmental protection, its success, and the consequences of failure, and showing what it will mean for the economy in the future. (Donner et al. 2011)

The second pillar, which often receives importance in the international press, is the pillar of economic rationality. The message of this pillar is that economic rationality must govern a sustainable world, i.e. enterprises that cannot financially develop their operations to profitability are not sustainable enterprises. (Spangenberg, 2005) The sustainability of the economy is a significant issue because the economy itself is one of the most important elements of the functioning of our society. (Holton, 2013)

This is particularly true for the SME sector, where adaptability is important and important for growth and sustainable economic performance. (Hamelin, 2011) The sector of small and medium-sized enterprises is the driving force of almost every economy, as they are very important elements in both employment and economic competition, and their advantages are especially important in emergency situations, in which this feature can give society solid ground in a turbulent environment. (Varum – Rocha, 2013) Sustainability is therefore necessary for the business sector not only from the point of view of the social environment or nature conservation, but also from the point of view of economic stability. (Shields – Shellerman, 2015)

The third pillar of sustainability, the pillar of social equity, exerts its influence through four concepts: public awareness, equity, participation and social cohesion. (Murphy, 2012) This pillar is less strongly implemented in practice, as its nature and the conditions for its implementation make it difficult not only for decision-makers to apply it, but also for the society that it originally supports to enjoy its benefits. (Boström, 2012) However, in order to successfully carry out the most important and fundamental task of sustainability, it is necessary to make sure that there is a link between society and nature,

through which man and the environment can mutually cooperate, taking the future into account. (Littig – Griessler, 2005)

Most research has shown that the three pillars generate common positive externalities that have a positive effect and strengthen the stability of the pillars. (Hansmann et al. 2012) And this creates a wider network of connections, which through connections transmits these external positives to other sectors or at the level of communities. (Tavera Romero et al. 2021) With regard to crisis situations (less so from the perspective of the 2008 economic crisis or the H1N1 virus, especially from the perspective of the Coronavirus pandemic or the war in Ukraine), the affected economies and societies have a great need to increase their ability to adapt. The aforementioned crisis situations also showed that the responsiveness and ability of our systems in difficult situations is very important. (Shevchuk et al. 2023)

Integrated marketing-communications is a tool similar to sustainability, as it tries to rationalize the marketing-communications process, and in addition to making maximum use of its possibilities, it also aims to minimize expenses and burdens, in addition to improving the consumer experience. In a world that is transforming along the lines of globalization, change is necessary in itself compared to the established practice of the previous Century, and rethinking marketing along the lines of sustainability has been proven in crisis situations. (Iankova – Longart, 2022) Integrated marketing-communications fits into this picture - to rationalize and make business management sustainable with long-term planning and focused marketing activities. (Percy, 2023)

1.2. Goals of research

- My **G1.** goal is to get an idea of the enterprises in the small and medium-sized enterprises sector from the perspective of sustainability, as well as to map how certain foundations of sustainability-orientation contribute to the achievement of the sustainability objectives of enterprises in the Hungarian SME sector. Sustainability-orientation is basically an entrepreneurial attitude and behavioral pattern that shows how much you strive to keep sustainability in mind during your business. I would like to extend this to the small and medium-sized enterprises themselves.
- My **G2.** goal is to determine what integrated marketing-communications means to Hungarian SMEs - at what level do they know it, at what level do they practice it, and what opportunities do they see in it. I would like to search for points of connection in the toolbox of integrated marketing-communications that have a mutual positive effect with higher levels of sustainability-orientation.
- My **G3.** goal is to identify whether there is a connection between sustainability-orientation and the cultivation and operation of integrated marketing-communications, and in what form and extent this plays a role in the sector. In relation to the mutual positive effects defined in the G2 goal, I would also like to know how the companies that do not use these tools with such importance perform

and, if possible, to find the reasons for the differences in performance from the perspective of the two investigated areas.

- My **G4**. goal is to interpret external factors important for the Hungarian SME sector in an approach inspired by the SWOT model. The external factors are the Coronavirus epidemic that started in 2019, and potential future international crisis situations threatening similar dangers as 'dangers', and the subsidies provided directly by the European Union as 'opportunities'.

In the case of the Coronavirus, I wished to know whether these toolkits are able to reduce the harmful effects on the SME sector of crisis situations that bring significant, day-to-day changes to society and the economy. In addition, whether it is worth investing in these tools as an effort to avoid the effects of crisis situations.

In terms of 'opportunities', my goal is to assess what kind of support sustainability-orientation and integrated marketing-communications mean for the SME sector in relation to the European Union.

1.3. Hypotheses of the research

- **H1/A: According to the sustainability pillar of economic rationality (economic sustainability), a larger percentage of sustainable Hungarian small and medium-sized enterprises carry out a planned marketing process.**

According to my assumption, Hungarian SMEs are primarily sustainability-oriented from the point of view of economic rationality due to the characteristics of Hungarian society. Even though our professional knowledge and literature clearly state that economic rationality is the inalienable goal of businesses, I consider it essential to examine it specifically from the point of view of marketing-communications, as well as to support this with clear results regarding the other two examined pillars of sustainability. The reason for this is the importance of the previously mentioned external influences experienced since the turn of the millennium.

- **H1/B: The majority of Hungarian small and medium-sized enterprises strive for sustainability according to the sustainability pillar of social equity (social sustainability).**

According to my assumption, the majority of Hungarian SMEs are sustainability-oriented based on sustainability according to social equity. Part of my assumption is that Hungarian SMEs are trying to make further investments related to social sustainability, especially on the local scene. In light of my preliminary research, these are the three aspects that I will use during the research - support for citizens with reduced working capacity, development of benefit systems, and integration into the local community.

- **H1/C: The part of Hungarian small and medium-sized enterprises that strives for sustainability according to economic rationality and social fairness also**

strives for sustainability according to the sustainability pillar of nature protection (environmental sustainability).

I assume that those businesses that strive towards sustainability in the case of the other two pillars will also turn towards sustainability in this issue. Following the target board model of sustainability, I believe that a responsible company, bearing in mind economic (internal) and social (internal-external) factors, represents behavior that also takes into account environmental (external) factors (Mann, 2011).

- **H2: The communication practice of sustainability-oriented Hungarian small and medium-sized enterprises strives for integrated marketing-communications.**

My assumption stems from the fact that integrated marketing-communications is a tool that, similar to the methodology of sustainability, opens up possibilities for rationalization and the best possible use of the range of possibilities. It can also be assumed that SMEs are forced to optimize their activities, as they generally do not have the communication coverage to effectively compete with large enterprises.

- **H3: The application of integrated marketing-communications and sustainability-orientation had a direct positive effect on SMEs during the Coronavirus epidemic.**

For the analysis of the effects of the Coronavirus epidemic, I will primarily take economic performance as a basis, in the light of the epidemic. To do this, I will examine two main aspects, which are the most obvious indicators for all businesses, regardless of their size or nature: economic performance, as well as the number of employees, including possible layoffs. The two aspects are also excellent for the impact assessment, because the two can work at the expense of each other, and we can really only consider a business truly sustainable according to each pillar if it managed to balance these factors.

- **H4: The application of integrated marketing-communications and sustainability-orientation had a direct positive effect on SMEs' access to European Union subsidies.**

Since the European Union is also an unavoidable context for the SME sector, and its impact on Hungary is outstanding both in terms of legislation and the support system, I also wanted to examine what opportunities it opens up for businesses and what obstacles the European Union scene poses to them. In the future, the European Union intends to make a significant part of the subsidies available to the supported partners as direct subsidies, which opens up new horizons in the fundraising possibilities of the SME sector, which is strongly supported by the European Union. Therefore, I consider it important to examine the marketing-communications and sustainability-orientation that serve them, and I interpret their importance in the direction of the European Union through the most important European Union connection point for the SME sector, i.e. the support system.

2. MATERIALS AND METHODS

For my research, I looked for Hungarian small and medium-sized enterprises with no more than 249 employees, but micro-enterprises with 0 or 1 employees were left out of the sample. The reason for this, as I alluded to in the literature review, is the nature of my research topic. Since I want to measure the sustainability-orientation, a fundamentally entrepreneurial attitude, from the point of view of businesses, if the number of employees of the enterprise does not exceed that of the entrepreneur, then there is no significant difference between the attitude of the organization and the entrepreneur. In this case, it is not possible to match the attitude to the business.

In compiling my research, I was supported by the experience and knowledge gained during previous research, as I mentioned above: interviews with experts, questionnaire surveys with SME samples, and impact assessments with consumers (Bajkó et al, 2022). I derived the foundations of my own research from these and from the theoretical foundations described in the literature. The method used to carry out the research is a questionnaire survey (Babbie, 1992). The source of the sample population was a purchasable company database. The research was anonymous, data collection, and took place between December 2022 and April 2023, in two stages. The initial phase of the data collection was done with an online questionnaire, however, the number of filled-in items returned barely reached thirty in a month, so later I continued the data collection with telephone inquiries, so I was also able to provide support in filling the questionnaire. During the two stages, I asked representatives of a total of nearly five hundred businesses to fill out my questionnaire. In the end, I managed to record the data of a total of 318 businesses. Among the recorded data, there were no invaluable fillings or significant missing data (partly due to the nature of the telephone inquiry). I processed the successfully recorded data using the Microsoft Excel program and, where necessary, after standardizing the answers, analyzed them using the IBM SPSS statistical program package. After the analysis, I display the data using the IBM SPSS statistical program package and Microsoft Excel programs. Since the data collection was anonymous, it was not necessary to carry out additional data security tasks with the completed database, or to destroy the data. I present and interpret the results, and then reveal the relationships sought in the objectives based on the results. In the next part, I will confirm or reject my research hypotheses with the revealed connections and results. In the course of my hypotheses, I rely on research that has already been carried out, which either directly or indirectly dealt with my research topic in the past, if they are available. The individual groups of questions and the methods used for their analysis are shown in Table 1. A summary of the objectives, hypotheses and questionnaire questions, as well as the analysis methods, can be seen in Table 2.

2.1. Methods used for analysing data

1. Table: Question groups and statistical methods summary. Source: self-made.

Question group 1 (base data)	Descriptive statistics, qualitative research
Question group 2 (marketing)	Descriptive statistics, Factor analysis, Cluster analysis
Question group 3 (sustainability)	Descriptive statistics, Factor analysis, Cluster analysis
Question group 4 (Coronavirus)	Descriptive statistics, qualitative research

2.2. Connection of Goals, Hypotheses, Questions and Methods

2. Table: Connections between research elements explained. Source: self-made.

<p>My G1. goal is to get an idea of the enterprises in the small and medium-sized enterprises sector from the perspective of sustainability, as well as to map how certain foundations of sustainability-orientation contribute to the achievement of the sustainability objectives of enterprises in the Hungarian SME sector. Sustainability-orientation is basically an entrepreneurial attitude and behavioral pattern that shows how much you strive to keep sustainability in mind during your business. I would like to extend this to the small and medium-sized enterprises themselves.</p>	<p>H1/A: According to the sustainability pillar of economic rationality (economic sustainability), a larger percentage of sustainable Hungarian small and medium-sized enterprises carry out a planned marketing process.</p>	<p>Q9, Q14, Q15, Q16-Q23, Q24-Q26, Q35-Q42</p>	<p>Regression analysis</p>
	<p>H1/B: The majority of Hungarian small and medium-sized enterprises strive for sustainability according to the sustainability pillar of social equity (social sustainability).</p>	<p>Q24-Q30</p>	<p>Cluster analysis</p>
	<p>H1/C: The part of Hungarian small and medium-sized enterprises that strives for sustainability according to economic rationality and social fairness also strives for sustainability according to the sustainability pillar of nature protection (environmental sustainability).</p>	<p>Q24-Q42</p>	<p>Factor analysis</p>

<p>My G2. goal is to determine what integrated marketing-communications means to Hungarian SMEs - at what level do they know it, at what level do they practice it, and what opportunities do they see in it. I would like to search for points of connection in the toolbox of integrated marketing-communications that have a mutual positive effect with higher levels of sustainability-orientation.</p>	<p>H2: The communication practice of sustainability-oriented Hungarian small and medium-sized enterprises strives for integrated marketing-communications.</p>	<p>Q13-Q23</p>	<p>Correlation analysis</p>
<p>My G3. goal is to identify whether there is a connection between sustainability-orientation and the cultivation and operation of integrated marketing-communications, and in what form and extent this plays a role in the sector. In relation to the mutual positive effects defined in the G2 goal, I would also like to know how the companies that do not use these tools with such importance perform and, if possible, to find the reasons for the differences in performance from the perspective of the two investigated areas.</p>	<p>H2: The communication practice of sustainability-oriented Hungarian small and medium-sized enterprises strives for integrated marketing-communications.</p>	<p>Q13-Q42</p>	<p>Correlation analysis</p>
<p>My G4. goal is to interpret external factors important for the Hungarian SME sector in an approach inspired by the SWOT model. The external factors are the Coronavirus epidemic that started in 2019, and potential future international crisis situations threatening similar dangers as 'dangers', and the subsidies provided directly by the European Union as 'opportunities'.</p>	<p>H3: The application of integrated marketing-communications and sustainability-orientation had a direct positive effect on SMEs during the Coronavirus epidemic.</p>	<p>Q11-Q49</p>	<p>Correlation analysis, Linear regression model</p>
<p>In the case of the Coronavirus, I wished to know whether these toolkits are able to reduce the harmful effects on the SME sector of crisis situations that bring significant, day-to-day changes to society and the economy. In addition, whether it is worth investing in these tools as an effort to avoid the effects of crisis situations. In terms of 'opportunities', my goal is to assess what kind of support sustainability-orientation and integrated marketing-communications mean for the SME sector in relation to the European Union.</p>	<p>H4: The application of integrated marketing-communications and sustainability-orientation had a direct positive effect on SMEs' access to European Union subsidies.</p>	<p>Q7, Q8, Q11-Q15, Q27-Q42</p>	<p>Correlation analysis</p>

3. RESULTS

I performed a factor analysis of the sustainability-orientation criteria to obtain the sustainability-orientation indicator, but in the first round the test was unsuccessful, because in the Anti-image matrix the variables Q34 (We support extensive environmental protection) and Q35 (We participate in large environmental protection systems) were not adequate based on the MSA value, so I had to exclude these two variables from the factor analysis.

After the exclusion, the correlation matrix gave positive results, as expected, statistically adequate correlations and statistically significant relationships in almost all cases. After checking the data, I looked at the results of the Kaiser-Meyer-Olkin and Bartlett tests to see if they confirmed that the sample was suitable for factor analysis. As can be seen from the averages, the KMO test gave a very high value (.924), while the statistical significance was confirmed, so the factor analysis can be considered successful. The factor analysis itself produced the expected result based on the averages: during the preliminary test, six factors were ideal for the sample, with which the test reached the 70% variance ratio. A significant proportion of variance appears in the first factor (~41%), which shows the strong cohesion of the sustainability-orientation in the sample. I chose the Varimax method for the rotation of the components. Thus, the component matrix is shown in Figure 1.

Rotated Component Matrix^a

	Component					
	1	2	3	4	5	6
HosszútávBefektetésPreferál	,793					
DolgozóbarátMunkahely	,744					
MagasProfitHelyettBiztosFejlődés	,560		,422			
KörnyezetbarátTech	,509		,469			
LakosságraFigyelünk	,501	,430		,448		
MunkaMagánEgyensúly		,819				,376
RövidProjektHosszúTervhezIgazít	,367	,602	,331		-,305	
KözvetlenKörnyezetBefektetés	,326	,474		,315		
NemekEgyenlőség		,465	,342			
HelybenBeszerez			,854			
HosszúTávraTervez			,529	,349		
CSMK				,863		
StabilBiztosBefektetésPreferál					,929	
KöltségRacionalizálFolyamatos						,828

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 10 iterations.

**1. Figure: Component matrix for the factor analysis of sustainability-orientation.
Source: SPSS.**

Based on information about the inputs, I named the six factors as such:

- 1. factor: the highest value was assigned to long-term investment preference, while lowest to investment into direct environment. The factor was named **consistent engagement**.

- 2. factor: the highest value was given to the support of the balance between work and private life, while the lowest was to attention to the local population. I named the factor **human resource support**.
- 3. factor: the highest value was given to the preference for local procurement, while the lowest was the adjustment of short-term projects to the long term. I named the factor **community engagement**.
- 4. factor: the highest value was given to the opportunity given to people with reduced working capacity, while the lowest was the willingness to invest in the immediate environment. I named the factor **social equity**.
- 5. factor: the factor explains a total of two components, of which the preference for stable, secure investment is extremely high. I named the factor **forward-looking management**.
- 6. factor: the factor explains a total of two components, of which continuous cost rationalization is exceptionally high. I named the factor **alternative benefit and support**.

In the next step, I also performed the factor analysis for integrated marketing-communications. Of course, the data in this factor analysis were no longer as clear - the averages were much lower than the averages belonging to the factor analysis of sustainability-orientation and were more inconsistent based on the standard deviation values, which reduces the cohesion of the entire sample and thus also the variance ratio of the factors to be formed.

I ran a test again, where I chose the same methodology as the sustainability-orientation, based on the initial solution (Initial solution), and the Anti-image matrix again filtered out an element that could not be included in the test, the question Q16 (We communicate with clear, simple messages.). Thus, after running the factor analysis again, I got statistically significant values in the majority of cases.

After checking the correlation matrix, I looked at the results of the Kaiser-Meyer-Olkin and Bartlett tests to see if the sample produced acceptable results and was suitable for factor analysis. Although the values were of course lower than the values of the sustainability-orientation factor analysis, the test was successful here as well.

After the successful test, I analyzed the component matrix. The factor analysis produced four factors, the components were rotated using the Varimax method. The component matrix is shown in figure 2.

Component Matrix^a

	Component			
	1	2	3	4
GyorsMarketingReakció	,641	-,382		
RövidTömörÜzenet	,638			,317
FigyelMarketingHatékonyság	,604			-,397
FogyasztóVisszajelzés	,523		-,416	,463
FogyasztóVéleményBeépítés	,393	,812		
FogyasztóraMarketinggel	,476		,778	
EgységesÜzenet	,539			-,596

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

2. Figure: Component matrix for the factor analysis of integrated marketing-communications. Source: SPSS.

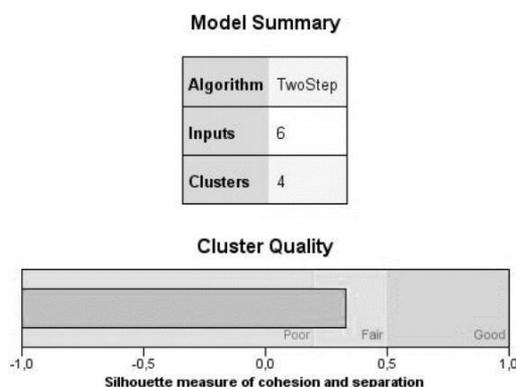
Based on information about the inputs, I named the four factors as such:

- 1. factor: all variables were given a similar weight. That is why I named the factor **integrated marketing-communications index**.
- 2. factor: explains a total of two components, of which the inclusion of consumer opinions in marketing is exceptionally high. I named the factor **consumer-centric marketing**.
- 3. factor: explains a total of two components, of which marketing focusing on the needs of the consumer is exceptionally high, but the consumer's feedback shows a negative correlation. I named the factor **push marketing**.
- 4. factor: in the fourth factor, the abandonment of the marketing efficiency test and the use of a non-uniform message, as well as the short, concise message, and the dual focus on consumer feedback appear polarized. I named the factor **interactive marketing**.

In the next step, I examined the relationship of the integrated marketing-communications index with the success of European Union subsidies and economic performance indicators in order to determine whether it has an effect on them. I established the relationships with a simple correlation test. According to my results, integrated marketing-communications did not show a strong and coherent relationship neither with the changes in company practice during the coronavirus, nor with the deterioration of results during the coronavirus, nor with the improvement in results after the coronavirus.

In the following study, I examined the relationship between integrated marketing-communications and the winning European Union tenders. The study showed a weak but significant relationship between the two factors.

In the next step, I tried to subject my sample to cluster analysis based on the factors. For the cluster analysis, I chose the two-step cluster analysis, as preliminary studies gave the best feedback on this method. The cluster analysis finally created four clusters, which according to the consistency test are of acceptable quality.



3. Figure: Results for model summary on the sustainability-orientation cluster analysis. Source: SPSS.

Based on the cluster quality and the quantity of clusters, the study can be considered successful. The structure of the four clusters is properly separated from each other, the order of importance of the incoming estimators is: Forward-looking management, Social equity, Consistent involvement, Human resource support, Community engagement, and Alternative benefits.

Size	38,1% (121)	23,3% (74)	22,6% (72)	16,0% (51)
Inputs	Előrelátó Gazdálkodás 0,59	Előrelátó Gazdálkodás 0,24	Előrelátó Gazdálkodás -1,39	Előrelátó Gazdálkodás 0,22
	Társadalmi Méltányosság 0,57	Társadalmi Méltányosság -0,08	Társadalmi Méltányosság 0,28	Társadalmi Méltányosság -1,64
	Következetes Szerepvállalás 0,29	Következetes Szerepvállalás -1,05	Következetes Szerepvállalás 0,37	Következetes Szerepvállalás 0,32
	Humán Erőforrás Támogatása 0,34	Humán Erőforrás Támogatása -0,94	Humán Erőforrás Támogatása 0,12	Humán Erőforrás Támogatása 0,38
	Közösségi Elköteleződés 0,35	Közösségi Elköteleződés -0,55	Közösségi Elköteleződés -0,10	Közösségi Elköteleződés 0,10
	Alternatív Juttatások 0,15	Alternatív Juttatások -0,21	Alternatív Juttatások 0,06	Alternatív Juttatások -0,14

4. Figure: Results for the sustainability-orientation cluster analysis. Source: SPSS.

Based on the structure and size of the clusters, however, no clear difference in sustainability-orientation can be stated between the examined elements. Neither the size of the largest cluster nor the values show such a significant difference that would bring the range of values for sustainability-orientation above average. During the analysis of the clusters, based on the cluster sizes, the explanatory values, and the variance ranges of the factors, it can be said that more than 50% of the enterprises in the sample (cluster 1, cluster 3) operate according to the sustainability-orientation according to the factors condensing social sustainability.

In the next step, I examined the first sub-hypothesis of my first hypothesis. Since neither the factor analysis nor the cluster analysis in relation to sustainability-orientation yielded the results I expected, I used a linear regression model between the values of the organized marketing activity and the values of the questions related to economic sustainability-orientation.

According to the ANOVA table, the significance of the regression was less than .001, the regression model worked, so the variables have an influence on the marketing activity. Of the individual variables, only the preference for stable, secure investment had no significant effect on marketing activity, the other three economic sustainability-orientation factors show a weak positive, significant relationship with marketing activity. The coefficient table is shown in Figure 5.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-,1116	,199		-5,601	,000
	HelybenBeszerez	,157	,026	,307	5,934	,000
	KöltségRacionalizálFolyamatos	,127	,032	,191	3,948	,000
	MagasProfitHelyettBiztosFejldés	,139	,025	,288	5,513	,000
	StabilBiztosBefektetésPreferál	,014	,032	,020	,435	,664

a. Dependent Variable: Marketinggel

5. Figure: Coefficient-table for the regression analysis. Source: SPSS.

Among the coefficients, except for the preference for stable investment, all the coefficients affected the marketing activity.

In the next step, I had to form an indicator from the sustainability-orientation, which is suitable for comparison studies. For this purpose, I form a simple KPI by averaging all relevant indicators of the questionnaire, which allows comparison. The established KPI („FenntartÁtlag”) was used in my first analysis, which was the relations between sustainability-orientation and integrated marketing-communications.

The sustainability-orientation KPI showed a weak-medium but significant relationship with the integrated marketing-communications factor.

Examining the KPI further, I subjected the sustainability-orientation KPI and the receipt of European Union subsidies to a correlation test. Based on the moderate positive correlation and statistical significance, sustainability-oriented Hungarian SMEs had a better chance of participating in tenders financed by the European Union.

Finally, I performed a linear regression analysis of the sustainability-orientation KPI, with the questions related to the Coronavirus (Q46-49). The regression test was successful, significant according to the ANOVA table. The interpretation of the values allowed us to conclude that expenditure reduction without layoffs and layoffs have a weak-medium but significant relationship with the sustainability-orientation KPI, while changes in price and marketing activity are not significant.

As the next analysis of my research, I performed a linear regression analysis of the sustainability-orientation KPI, with questions related to the Coronavirus (Q46-49). The variables included in the model and the summary of the model can be seen in the appendices (7). The test finally gave an R-value of 0.615 with a significance value of 0.000 and a standard error value of 0.394. It is therefore clearly visible that the presented

values of the model meet the requirements of the study, and no variable was excluded from the model. If the significance reaches the required level, the test is considered successful. I also requested an ANOVA table for the significance value. Since according to the ANOVA table, the significance of the regression takes a value less than 0.001 (.000), the regression model works, so there is a relationship between the variables and the sustainability-orientation KPI.

The results of the factor tests separately for sustainability-orientation and integrated marketing-communications did not yield distinctive, strong factors, so I further investigated the possibilities of developing the factors. After running several tests, taking into account the interpretation of the auxiliary tests and the test results, I created a grouping of the input data of the two values, which resulted in a factor analysis with strong results. In this study, the selected input factors are presumably taken into account because they are the most coherent data sets. The factor analysis ended with 266 items, i.e. 53 items were excluded from the program citing lack of data (these are the businesses that answered no to the use of integrated marketing-communications, so they did not answer the questions regarding the individual items). The factor analysis finally resulted in five factors, which can be seen in Table 3.

3. Table: Results of the combined factor analysis. Source: self-made.

Factor	Total	Variance %	Cumulative %	Total	Variance %	Cumulative %
1	4,851	30,319	30,319	4,851	30,319	30,319
2	1,641	10,256	40,575	1,641	10,256	40,575
3	1,112	6,950	47,525	1,112	6,950	47,525
4	1,070	6,689	54,215	1,070	6,689	54,215
5	1,034	6,464	60,678	1,034	6,464	60,678
6	,810	5,059	65,738			
7	,764	4,777	70,515			
8	,749	4,684	75,199			
9	,652	4,075	79,273			
10	,599	3,742	83,016			
11	,565	3,531	86,547			
12	,501	3,129	89,675			
13	,489	3,056	92,732			
14	,421	2,630	95,362			
15	,406	2,538	97,900			
16	,336	2,100	100,000			

Based on information about the inputs, I named the five factors as such:

- 1. factor: the highest value was achieved by inputs related to sustainability, among which the environmental and social factors were included to the most significant extent. I named the factor **social responsibility**.
- 2. factor: the highest values in the factor were given to inputs focusing on long-term investments. I named the factor **long-term development**.
- 3. factor: the factor especially focusing on communication with clear and uniform messages. That's why I named the factor **marketing messages**.
- 4. factor: a factor based in a larger part on monitoring consumer feedback and cost rationalization, and in a smaller part on employee friendliness. I named the factor **cost rationalization**.
- 5. factor: the factor explains a total of two components, the incorporation of consumer opinions and the need for stable development. I named the factor **development based on consumer opinion**.

Next, I investigated whether it is possible to create a strong cluster analysis with this result. First, I performed a hierarchical cluster analysis using Ward's method, which allowed me to determine the ideal cluster size. Based on the standard deviation values, the Ward method gave the correct value, so I performed a K-means cluster analysis for three clusters. Due to the cleaner clusters formed by the data, the two-step cluster analysis was not necessary here, since the internal cohesion between the input factors was smaller in the factor analysis, so the cluster analysis could also give a more diversified result. The C1 cluster has 15 members, without exception, its actors are micro-enterprises, all of which fall into the category of less than 10 employees. Marketing activities are carried out by all but two enterprises. A total of two companies are also active at the national level. These businesses least incorporate the opinions of consumers into their processes, and are also the most lagging behind in creating worker-friendly conditions. They do not prefer investments that promise long-term returns, nor are they non-participants of environmental protection systems. Based on these, I named the cluster **vegetative state enterprises**.

The 58 members of the C2 cluster are also all micro-enterprises, only eight do not carry out separate marketing activities, and there are also eight enterprises operating at the national level among them - however, there is no connection between the two data. They are the ones who prefer the use of simple, clear messages, that is, they have strong integrated marketing-communications and almost reach the highest level in their preference for stable, long-term returns over profit. Based on these, I named the cluster **catching-up enterprises**.

Cluster C3 includes all 90 small and 24 medium-sized enterprises included in the study, as well as the remaining 79 micro-enterprises. For the most part, they carry out activities that go beyond local operations, including 2 international, 19 national, 9 regional, 124 county and only 39 city-level businesses. They all carry out marketing activities, and 134 of them use the tools of integrated marketing-communications. Based on these, I named the cluster the **frontrunner enterprises**.

I also looked at the connections between the three clusters in relation to the Coronavirus epidemic and European Union subsidies. While the clusters did not show specific differences with regard to the Coronavirus epidemic, the C3 cluster stood out in terms of receiving European Union subsidies, since about a third of the cluster had already applied for direct funding, and a quarter of the cluster, i.e. about eighty percent of the applicants, had successfully applied.

3.1. Hypothesis validation

Since neither the factor analysis nor the cluster analysis in relation to sustainability-orientation yielded the results I expected, I used a linear regression model between the values of the organized marketing activity and the values of the questions related to economic sustainability-orientation. The test finally gave an R-value of 0.612 with a significance value of 0.000 and a standard error of 0.316. The presented values of the model meet the requirements of the study, and no variable was excluded from the model. Among the coefficients, except for the preference for stable investment, all the coefficients affect the marketing activity. According to this, **“H1/A: According to the sustainability pillar of economic rationality (economic sustainability), a larger percentage of sustainable Hungarian small and medium-sized enterprises carry out a planned marketing process.” is partially accepted.**

In the results of the sustainability-orientation cluster analysis, the size difference between the clusters is only 2.37, which shows the effectiveness of the analysis, since there are no elements left behind in separate clusters (e.g. extreme values). During the analysis of the clusters, based on the cluster sizes, the explanatory values, and the variance ranges of the factors, it can be said that more than 50% of the enterprises in the sample (cluster 1, cluster 3) operate according to the sustainability-orientation based on the factors aggregating social sustainability. Thus, the **“H1/B: The majority of Hungarian small and medium-sized enterprises strive for sustainability according to the sustainability pillar of social equity (social sustainability).” is accepted.**

During the factor analysis, I was unfortunately faced with the fact that the environmental protection aspects are either in a dependent relationship with other aspects, which is why they could not be included in the study, or they received low values overall in the sustainability-orientation factors. The dependency relationship developed in the direction of economic aspects in the case of environmental protection aspects. Thus, **“H1/C: The part of Hungarian small and medium-sized enterprises that strives for sustainability according to economic rationality and social fairness also strives for sustainability according to the sustainability pillar of nature protection (environmental sustainability).” is rejected.**

I had to form an indicator from the sustainability-orientation, which is suitable for comparison studies. For this purpose, I form a simple KPI by averaging all relevant indicators of the questionnaire, which allows comparison. The established KPI („Fenntartásatlag”) was used in my first analysis, which was the relations between sustainability-orientation and integrated marketing-communications. The sustainability-orientation KPI showed a weak but significant relationship with the integrated marketing-

communications factor. Although the strength of the relationship is not high, it is acceptable based on the statistical characteristics of the sample. However, the results of the second cluster study proved that those clusters (C2 and C3) which place a stronger emphasis on sustainability also significantly pull towards integrated marketing-communications in their marketing-communications practice. According to this, “**H2: The communication practice of sustainability-oriented Hungarian small and medium-sized enterprises strives for integrated marketing-communications.**” is accepted.

There would be a weak negative relationship between the change in practice and the integrated marketing-communications, but the value is so low that it is not possible to declare the existence of an essential relationship, so this study could not show a statistically significant correlation. The situation in the correlation analysis of the relationship between the integrated marketing-communications index and the perceived performance deterioration of the enterprise is the same as in the previous case, the analysis would show a weak, negative relationship, but in addition to the negligible weakness of the relationship, the significance level is also too low, to make it acceptable. My third and last investigation is the investigation of the correlation between the integrated marketing-communications index and whether the company's results have improved after the Coronavirus. Although this correlation test proved to be significant, its correlation value is again so small that it can hardly be considered a weak relationship. Therefore, despite the significant result, I have to consider this test also unsuccessful. Overall, it can be said that although there is some connection between the integrated marketing-communications and the performance data collected in connection with the Coronavirus, it cannot be considered decisive in relation to the present investigation based on the results. Furthermore, I also performed a linear regression analysis of the sustainability-orientation KPI, with the questions related to the Coronavirus (Q46-49). The interpretation of the values allows us to conclude that the reduction of expenses without layoffs and the layoffs have a weak-medium but significant relationship with the sustainability-oriented KPI, while the changes in price and marketing activity are not significant. According to this, “**H3: The application of integrated marketing-communications and sustainability-orientation had a direct positive effect on SMEs during the Coronavirus epidemic.**” is partially accepted.

I examined the relationship between integrated marketing-communications and the winning European Union tenders, using a correlation analysis. Although the relationship between successful participation in European Union tenders and integrated marketing-communications is weak-positive, it approaches the upper level of weak relationships, and the significance value is also strong. Thus, it is acceptable that this study produced a statistically significant result. In my second study, I subjected the sustainability-oriented KPI and the receiving of European Union subsidies to a correlation study. Based on the moderate positive correlation and statistical significance, it can be stated that sustainability-oriented Hungarian SMEs have a better chance of participating in tenders financed by the European Union. The conclusion was also confirmed by the results of the second cluster analysis, as the third (C3), the most significant cluster in terms of sustainability-orientation and the one that makes the most use of integrated marketing-

communications tools, included all the companies applying for European Union grants. If we look at the proportions of the cluster, roughly one-third of the C3 cluster applied for direct European Union funds. In light of the fact that a quarter of the cluster was able to apply successfully and received funds directly from the European Union, it can be said that the companies in the cluster were not only more significant in terms of sustainability-orientation and integrated marketing-communications than the other companies, but also in the European Union they also enjoyed benefits in applying for subsidies. According to this, **“H4: The application of integrated marketing-communications and sustainability-orientation had a direct positive effect on SMEs' access to European Union subsidies.” is accepted.**

3.2. New and novel scientific results

- **The enterprises included in the sample could be meaningfully categorized according to the criteria of sustainability-orientation, so sustainability-orientation as an entrepreneurial attitude could be applied to Hungarian small and medium-sized enterprises, which shows the level of their commitment to sustainability.** This is an important result, since the sustainability-orientation shows the role of the business in the phenomenon of sustainability even without the indicator-based complex measurement systems used for this purpose, and has additional content in terms of achieving actual sustainability. It is also important to note that there are no requirement thresholds in this system for a given sample, which examines the sustainability efforts of businesses within a given sample more objectively than classification systems that use more dry data.
- **Based on the companies in the sample, there is a synergy and mutually beneficial relationship between the sustainability-orientation and the marketing activity.** In the analysis of integrated marketing-communications, it was proven that its use has a positive influence on the sustainability-orientation of enterprises, and thus facilitates the achievement of sustainability. In addition, the second factor analysis and the resulting cluster analysis showed that a stronger grouping of enterprises is possible based on the joint analysis of the two factors than on the basis of an individual analysis of either of them.
- **The sustainability-orientation tests proved that in the examined sample, individual pillars of sustainability are not given the same weight in the orientation of the enterprises.** In addition to economic sustainability, the higher role of social sustainability is a noteworthy result, as well as the statistically demonstrable dependence of compliance with the criteria of natural sustainability on the aspects of economic sustainability. It has also been proven that the orientation towards natural sustainability shows a closer statistical relationship with some elements of integrated marketing-communications. This latter relationship gives the opportunity for many assumptions, of which the presence of strongly performance-oriented inputs is perhaps the most outstanding among the

factors of sustainability-orientation. Employee-friendliness and maintaining gender equality are the two sustainability-orientation factors that cannot be connected in any way to the idea of rationalization and optimization, all of the remaining 14 input factors focus on this.

- **When analyzing the performance of the examined sample during the Coronavirus epidemic, I came to the conclusion that sustainability-orientation directly, while integrated marketing-communications indirectly (through sustainability) has a smaller effect on the performance of the examined enterprises.** However, it is advisable to note that due to the synergy between the two tools, it is not advisable to leave either of them in similar crisis situations, since the two tools together provide greater protection and more flexibility for businesses. The positive effect thus justifies the use of sustainability-orientation and integrated marketing-communications as a crisis management tool.
- **When analyzing the performance of the companies in the examined sample in tenders financed by the European Union, I came to the conclusion that both integrated marketing-communications and sustainability-orientation have a direct impact on the success of the examined companies.** The positive effect justifies that the company emphasizes the important elements of these two tools and the results of the areas during the tender application in order to increase the chances of the application being successful. Mainly, the character of the result of the cluster analysis made from the second factor analysis is an indicator of this.

4. CONCLUSIONS, SUGGESTIONS

During the long work of my research, I investigated such connection points as sustainability and marketing-communications, sustainability and the European Union, the SME sector and sustainability, and I was able to deal with many other exciting areas. Our environment, society and economy will have to face so many challenges and difficulties in the coming times, for which we need solutions and opportunities to help overcome them. In my research, I not only assessed the possibilities of sustainability and integrated marketing-communications, but I also tried to make them feel that these tools can be of help to the actors of the Hungarian SME sector. With the concept of sustainability-orientation, the SME sector can get an opportunity to stabilize the longer-term business process, which can guarantee lasting, resilient and profitable operation, which promotes the operation and safety of not only the sector, but also the national economy and society as a whole.

My proposal regarding the research is that the best practices should be found, implemented, documented and made available, understandable and feasible for the SME sector through the most important practical examples. The sector's potential can also help society to overcome crisis situations, so we must take advantage of every opportunity to support and strengthen it. The possibilities that can be found in the two toolkits are worthy of further research into their use in the future and to introduce their benefits to the actors of the SME sector as widely as possible.

In a scientific sense, I think it is important to suggest that we do more research on alternative uses of sustainability, marketing, and communication. Substantial improvement can definitely be achieved by optimizing the everyday life of a business, and all three areas have a lot of opportunities to optimize, take advantage of, and create and share excellent best practices. If the SME sector is able to apply these tools correctly in the future, they will be able to avoid both everyday problems and unexpected disasters like the Coronavirus pandemic, which hit the world unprepared.

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