Gender differences in attitudes to corporate social responsibility among Hungarian business students

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Abstract: - Nowadays, corporate strategies should include the approach and toolset of social responsibility. Although, there are several models available, the efforts on custom development are inevitable due to the diversity of the influencing factors of the effective solutions. Beyond corporate size, activity financial possibilities or territorial location, the attributes of management, staff and the needs and expectations of other interested parties must be considered. Female work and especially the impact of female managers on corporate performance has a growing attention in business researches. Since the managerial attitudes and beliefs may be reflected in corporate decisions, it is worth to examine what changes and challenges are to be expected with the increase in the proportion of female leaders. Moreover, the decisive role of the education system in developing a supportive attitude towards sustainability is to highlight. According to the relevant literature, there is a need for local investigation of the topic. The paper focuses on the attitudes to CSR issues among higher education students. The research sample consists of the responses of business students from various Hungarian universities of Hungarian higher education institutions (n=1087). Statistical analysis uses ANOVA, multidimensional scaling (MDS), correlation and cross-tabulation for processing the results of a survey. The hypothesis says that females' and males' perceptions and attitudes to CSR are different. Results confirm that females are more sensitive to CSR issues than males. However, respondents are uncertain about the content and role of CSR; and they consider CSR initiations mainly as a business tool.

1 Introduction

There is an enhancing interest in solving the global environmental and social problems over the past several decades. However, the break-through fails due to the conflict among the various interests, primarily economic ones (Laudal, 2011). Sustainable development offers a comprehensive framework, but the coequal relevance between ecological, social and economic components may lead to excusing from responsible interventions (Ekins, 1993).

Corporate social responsibility (CSR) initiations seem to give the answer on a corporate level since it incorporates stakeholder values and interests in business (Braun, 2013). The definition of the ISO 26000 standard gives a comprehensive approach to 'social responsibility': "responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behavior…" (ISO 26000, p.3.). This approach incorporates a contribution to sustainable development as well as the welfare of society, stakeholder-oriented thinking and compliance with law. The scope of application covers both internal and external relations.

A review of the CSR-pyramid model in Figure 1 (Carroll, 1979; Carroll, 2016) confirms that ethics permeates the levels.

Economic and legal levels are marked as 'required by the society'. Ethical responsibilities are marked as expected and philanthropic level as desired by the society.

Fig 1: Carroll's pyramid of CSR

Source: Carroll (2016)

The conceptual diversity also appears in the selection of tools for meeting the requirements and expectations mentioned above. CSR became a key strategic issue in the recent years. The practical and scientific interest led to various industrial concepts. Banking sector plays and increasing role in fostering CSR (see e.g. Pérez & del Bosque, 2015, Lentner et al., 2015; Polychronidoua et al., 2014; Mocan et. al, 2015); but the interest in a socially responsible approach is on the rise on case of pharmaceutical industry (Bene, 2016). Obviously, large and critical corporations' performance can have a great impact, but solving the global problems requires a wider range of adopters. Beyond large corporations, a growing attention is paid to small- and medium-sized enterprises (Shah et al., 2016; Hugyi & Takács-György, 2011).

Although, there are several methods, tools and best practices of CSR available (see e.g. Crane et al., 2012), the results and impacts depend on different factors including sectoral characteristics, corporate financial possibilities, technological development or human resources.

Managers play a special role since they have the authority to make changes. Managers are responsible for the effective operation of the organizational assets. Friedman (1970) questions the social responsibility of corporations, the corporate conscience can be traced back to personal ones.

According to developing corporate responsibility, among others, there is an increased pressure on education because its output determines the opinions and attitudes of the future decision makers. Educational challenge covers both giving a methodological training and presenting the possibilities for implementing truly responsible actions. Related research interest shall explore personal opinions and attitudes that allows a comprehensive evolution. This paper focuses on the gender differences of business students as future decision makers. We feel certain that CSR must be a core element of business higher education. In order to achieve it in an appropriate way, the characteristics of the target audience must be investigated thoroughly.

The growing attention to female workforce and especially to the performance of female managers has initiated our research about the CSR-relations of the topic.

2 Problem Formulation

2.1 Female leaders and managers

There are several comprehensive studies on female work (see e.g. Brown, 1979; Hakim, 2004) and local results explaining the future possibilities (e.g. Czipczer et al., 2017). Studies dealing with female leaders and managers (see e.g. Thompson, 2017; Bossler et. al, 2016; Elsesser, 2016) reveal the differences compared to male ones. Smith (2015) found that women are better bosses than man in motivation and recognition of personal success.

According to the quoted concept of Friedman (1970) about the role of personal factors in corporate behavior and the assumption that female and male attitudes may differ from each other, the question arises whether these differences may appear in business strategies including social responsibility initiations.

If the number of females is increasing both in CEOs, in boards or in management generally, it can also be expected that their opinions and attitudes will be increasingly reflected in decision-making. Results in the field suggests a clear link. Alonso-Ameida et al. (2015) points out that the ratio of female managers is increasing in Spain and due to their higher concern for CSR issues may lead to an intensified activity of corporations. McGuinness et al. (2017) reached similar conclusions based on a Chinese sample.

2.2 Local and gender differences in the perception of CSR issues

Continuous research activity in this field is necessary due to the accelerating changes in attitudes caused by the technological and societal development. Wang and Juslin (2012) explored the poor knowledge of CSR in China and urge targeted CSR education program, which meets the expectations of students. Researchers also found that there are significant territorial and gender differences in the perception of CSR-related issues. Studies dealing with personal aspects of social responsibility, especially education related ones show that differences by countries may be considered. Schmidt and Cracau (2015) and Bageac et al. (2011) denote significant differences in CSR attitudes by nationalities.

Kaya et al. (2014) did not find significant differences in attitudes by the level of CSR studies in Turkey; but e.g. Zsóka et al. (2013) found that education has impact on environmental behavior in Hungary. Jablonkai (2016) shows a detailed analysis of national and institutional background affecting the educational context of CSR in Hungary. According to her findings, even though there has been a slow but steady increase in the number of companies active in CSR, and several awards have been established; people in Hungary are not well-informed about CSR. Citizens' perceptions on companies' social responsibility can be characterized by higher skepticism than the EU average.

Lämsä et al. (2008) states that females place more emphasis on corporate ethical, environmental, and societal responsibilities. Schmidt and Cracau (2015) found that economic side of sustainability is less important for females in Germany and in Quatar. Kaifi et al. (2014) concludes that females, students from high-context culture and Y-generation has a higher commitment to social responsibility based on a US sample. Calabrese et al. (2016) compares CSR expectations and perceptions compared by gender and different levels of education. Females' responses show higher values in each case. However, the differences are significant only in case of expectations at lower education levels.

Although, the gender-oriented researches use different surveys and methods including the scope of social responsibility, a common conclusion is that females are more sensitive to environmental and social issues. However, national differences presented in the papers confirm the need for local research initiations of the topic.

2.3 Research goal and method

The purpose of the research is to contribute to the expansion of knowledge base about attitudes toward CSR by a Hungarian case. The survey uses an electronic, voluntary questionnaire managed by the EVASYS Survey Automation Software. It collects information about three topics processed in this paper:
- perception of global problems,
- opinions about CSR,
- CSR motivation of corporations.

The survey includes a list about some global environmental and social problems and asks the respondents to mark a maximum three of them as the most important ones (Berényi et al., 2016). Monitoring the actual state of the opinions allows conclusion on the changes of attitudes.

The survey includes statements about CSR and asks the respondents to mark the level of agreement on a five-point Likert-scale:
- CSR can help to achieve the goals of sustainable development (Helps achieving sustainability),
- Another tool for companies to generate profit (Increases profit),
- These actions represent only greenwashing and main problems are hidden (Tool of greenwashing),
- Excellent marketing communication tool (Marketing communication tool),
- CSR can help companies to coordinate and bring together various initiations (Coordination tool),
- CSR can only be successful in the case of large companies (Only for large companies),
- CSR implementation is expensive (Expensive implementation).

Respondents were asked to rank six elements related to CSR motivation of corporation:
- Attracting and convincing customers,
- Profit-making,
- Because other companies are also doing such a thing,
- Greenwashing and hiding the environmental and social problems,
- Solving environmental and social problems,
- Cost reduction.

The analysis in this paper uses gender as grouping factor. The hypothesis says that females' and males' perceptions and attitudes to CSR are different. Statistical analysis uses various methods matching the different modes of data collection

including correlation analysis, cross-tabulation, analysis of variance (ANOVA) and multidimensional scaling (MDS) if applicable. Data processing is supported by IBM SPSS Statistics Version 22, following the guidance of Verma (2013). Significance tests are performed at 95%.

2.4 Research sample and limitations
The research sample consist of 1087 responses of business students from various Hungarian universities. There is a limited sample available for ranking CSR motivation (n_{total}=450, n_{female}=353, n_{male}=130) after filtering the unclear rankings. Data collection period is 2016.

However, the findings can contribute a better understanding of sustainable development by a Hungarian case, and there are some important limitations to note. Our sample cannot be considered representative, which prevents us from generalizing conclusions for the whole population of higher education students, even business students in Hungary. A further limitation is that participation in the online survey was voluntary without a supervision while completing it; the results may reflect the reality with a bias.

69.9% of the respondents are females and 30.1% males. The sample includes both full-time (74.5%) and part-time (25.5%) students. 80.2% studies on bachelor level (including the third level vocational training, which is now partly integrated with bachelor studies in Hungary); 19.8% pursues master level studies. 69.1% has some work experience; 26.6% of the sample signed present or past internship and 52.4% employment. Specific knowledge level about CSR is quite low, 32.9% has a superficial knowledge, 11.3% has a detailed knowledge and 55.7% has never learnt about it. Although a comprehensive discussion of CSR is usually not highlighted in education programs, the tools and concept are affected by the curriculum of business economics, management and marketing.

Table 1: Distribution of the research sample

		Females (n=760)	Males (n=327)
Study level	bachelor	79.3%	82.3%
	master	20.7%	17.7%
Type of study	full-time	74.3%	74.9%
	part-time	25.7%	25.1%
Work experience	does not have	31.1%	30.6%
	has	68.9%	69.4%
Level of CSR studies	none	53.0%	62.1%
	superficial	35.5%	24.6%
	detailed	11.4%	11.0%

Source: own survey

5.0% of the respondents was born in 1980 or earlier and 11.7% between 1981 and 1990, so it can be stated that Generation Y (Strauss & Howe, 2000; 2008) is over-represented in the sample that allows to highlight the characteristics of the present and the near future employees.

Prensky (2001) calls Generation Y members digital natives, rather than digital immigrants. Digital environment and information technology permeates both their work and daily existence. Social media utilization is a prominent element of their lifestyle. It is to note that there is no clear agreement on the demarcation of the generations, it depends inter alia the test country due to the differences in technological development (Bolton et al., 2013). Kanchanapibul et al. (2014) deals with green purchase behavior in the target group. Their results confirm that the ecological knowledge has a significant effect on actual purchases. The authors conclude that the young generation appears to be more active than other groups to the environmental issues.

Le Hebel et al. (2014) found a link between the students' environmental attitudes and the students' level of interest in learning about specific environmental topics in France among the late representatives of Generation Y. Haanpää (2017) highlights the effect of pro-environmental attitudes on intentions and the strong direct effect of behavioral intention on pro-environmental behavior. Her findings confirm the need for special attention on education's responsibility.

Distribution of sample characteristics by gender is summarized in Table 1. Grouping criteria are used for exploring differences in judgement on CSR in details.

3 Problem Solution

3.1 Perception of the most important global problems
The top-five most important global problems by the total sample consists of starvation (marked by 52.6% of the respondents), climate change (51.8%), crime (34.7%), depletion of energy resources (24,7%) and Destruction of natural values (23.7%). Representation of other elements are under 20%. Differences by gender is tested by Chi-square indicator of cross-tabulation (Table 2). Significant results are marked by (*).

Table 2: Perception of global problems (marking by the % of the sub-sample)

	Total sample	Female	Male	Chi-square	sig.
Air pollution	19.1	17.5	22.9	4.366	.037*
Climate change	51.8	51.7	52.0	0.07	.933
Crime	34.7	37.9	27.2	11.506	.001*
Cultural changes	7.2	5.7	10.7	8.738	.003*
Degradation of built environment	1.8	1.7	2.1	0.234	.628
Depletion of energy resources	24.7	25.9	21.7	2.18	.140
Destruction of natural values	23.7	23.2	25.1	0.465	.495
Emission to water	19.3	18.8	20.5	0.411	.522
Extinction of species	16.7	16.4	17.1	0.076	.783
Healthy foods	8	7.9	8.3	0.041	.84
Household waste	2.9	2.5	3.7	1.129	.288
Industrial waste	11.6	9.9	15.6	7.32	.007*
Public safety	12.1	12.6	11.0	0.564	.453
Soil degradation	6.3	6.8	5.2	1.039	.308
Starvation	52.6	55.1	46.8	6.382	.012*

Source: own survey

Regarding the characteristics of the data set, the Cramer V indicator can interpret explanatory power of the significant results (Table 3). Gender can significantly explain the results on starvation (7.7%) and on crime (10.3%) but the strength of explanation is quite low. Beyond the sporadically observed remarkable differences, it is a general experience of the analysis that the explanatory power of gender is not prominent.

Table 3: Cramer V values (total sample)

	Cramer V	sig.
Starvation	.077	.012*
Climate change	.003	.933
Crime	.103	.001*
Depletion of energy resources	.045	.140
Destruction of natural values	.021	.495

Source: own survey

Four of five elements in the females' and males' list are the same (Figure 2), but the order is different; moreover, the judgement on importance is significantly different in three cases. The respondents rate starvation and climate change the

most important global problems. Comparing the results with former ones (Berényi et al., 2016) shows a clear shift of the focus to social issues.

Fig 2: Perception of global problems by gender (marked by % of the sub-sample)
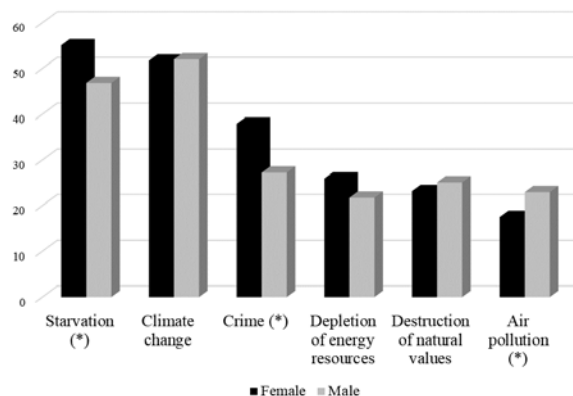
Source: own survey

3.2 Gender differences by sub-samples

A further analysis was performed for significant results presented in Figure 2 by the sub-samples defined in Table 1. Tables 4 to 7 present the ratio of markings by gender and include the results of Chi-square test, Cramer V indicator and significance values.

Table 4: Perception on starvation by sub-samples (cross-tabulation)

	Total sample (%)	Female (%)	Male (%)	Chi-square	Cramer V	sig.
Bachelor level	54.7	57.5	48.3	6.380	.086	.012*
Master level	44.2	45.9	39.7	0.661	.055	.416
Full-time	54.3	56.8	48.6	4.679	.076	.031*
Part-time	47.7	50.3	41.5	1.789	.080	.181
No work experience	56.8	58.9	52.0	1.362	.064	.243
With work experience	50.7	53.4	44.5	5.067	.082	.024*
No CSR knowledge	51.0	53.1	46.8	2.147	.060	.143
Superficial CSR knowledge	53.9	57.0	44.3	4.321	.110	.038*
Detailed CSR knowledge	56.9	58.6	52.8	.354	.054	.552

Source: own survey

There are significant differences by gender in the groups of bachelor students, full-time students, students with work experience and students with

superficial knowledge about CSR, however, the explanatory powers are within the range of 7.6% and 11%.

Table 5: Perception on crime by sub-samples (cross-tabulation)

	Total sample (%)	Female (%)	Male (%)	Chi-square	Cramer V	sig.
Bachelor level	37.7	41.0	30.5	8.694	.100	.003*
Master level	22.3	26.1	12.1	4.818	.150	.028*
Full-time	36.5	40.4	27.8	11.698	.120	.001*
Part-time	29.2	30.8	25.6	0.743	.052	.389
No work experience	37.5	40.3	31.0	2.567	.087	.109
With work experience	33.4	36.8	25.6	9.059	.110	.003*
No CSR knowledge	38.9	42.7	31.5	7.062	.108	.008*
Superficial CSR knowledge	29.9	33.3	19.3	6.221	.132	.013*
Detailed CSR knowledge	27.6	29.9	22.2	.748	.178	.387

Source: own survey

There are significant differences to observe in the perception of crime in six of nine groups in Table 5; explanatory powers are within the range of 10% and 15%.

Table 6: Perception on depletion of energy sources by sub-samples (cross-tabulation)

	Total sample (%)	Female (%)	Male (%)	Chi-square	Cramer V	sig.
Bachelor level	24.3	25.9	20.8	2.581	.054	.108
Master level	26.0	26.1	25.9	.001	.003	.970
Full-time	25.1	26.4	22.0	1.707	.046	.191
Part-time	23.5	24.6	20.7	.485	.042	.486
No work experience	25.6	26.7	23.0	.504	.039	.478
With work experience	24.2	25.6	21.1	1.691	.047	.194
No CSR knowledge	23.6	24.8	21.2	.988	.040	.320
Superficial CSR knowledge	24.6	25.9	20.5	1.072	.055	.301
Detailed CSR knowledge	30.1	31.0	27.8	.128	.032	.720

Source: own survey

There are two interesting notification to the results in Table 6:
- there are no significant differences by gender in any groups,
- assuming that master level, part-time studies and work experience is associated with a higher age, worry about depletion of energy sources is enhanced with increasing age, however, its significance is not proven. Similar pattern is not observable in case of social problems (Tables 4 and 5).

Table 7: Perception on air pollution by sub-samples (cross-tabulation)

|	Total sample (%)	Female (%)	Male (%)	Chi-square	Cramer V	sig.
Bachelor level	19.3	18.1	21.9	1.779	.045	.182
Master level	18.6	15.3	27.6	4.231	.140	.040*
Full-time	20.5	18.4	25.3	4.992	.079	.025*
Part-time	15.2	14.9	15.9	.043	.012	.835
No work experience	20.8	19.1	25.0	1.499	.067	.221
With work experience	18.4	16.8	22.0	2.891	.062	.089
No CSR knowledge	20.3	18.9	23.2	1.539	.050.	.215
Superficial CSR knowledge	19.6	17.8	25.0	2.201	.078	.138
Detailed CSR knowledge	12.2	10.3	16.7	.950	.088	.330

Source: own survey

Worry about air pollution shows a significant difference by gender in the groups of master level student and full-time students; explanatory powers are 14% and 7.9%.

Comparing the females' and males' ratios in the tables above confirms that females are more worried about social issues and males about environmental ones.

3.3 Judgement on CSR
Respondents' judgement on CSR was measured on a five-point Likert-Scale. Higher values show agree with the content of statement (Figure 3). Females' averages are usually higher; expect of the statement that CSR is an excellent marketing tool. Significant differences by gender are marked with (*) in Figure 3. Results of ANOVA analysis are to find in Appendix 1.

Fig 3: Judgement on CSR (mean values of individual evaluations on a 1 to 5 scale)
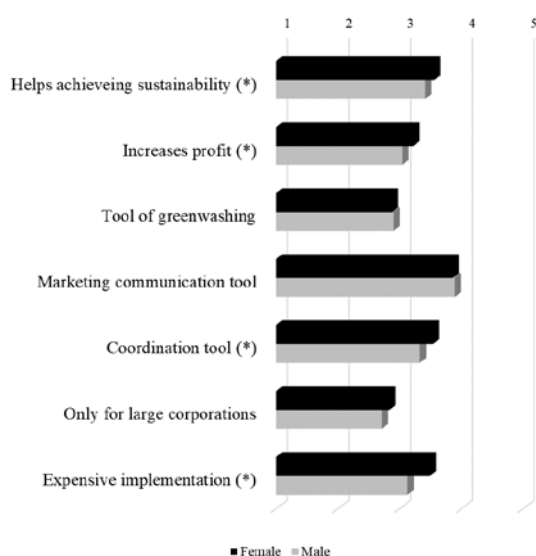
Source: own survey

Table 8: Judgement on CSR: distribution of agreeing and disagreeing responses by gender (% of the sub-sample)

	Females		**Males**	
	1 and 2	*4 and 5*	*1 and 2*	*4 and 5*
CSR can help to achieve the goals of sustainable development	8.4	53.6	13.5	49.8
Another tool for companies to generate profit	24.7	40.9	31.8	33.9
These actions represent only greenwashing (main problems are hidden)	38.8	27.5	36.1	27.8
Excellent marketing communication tool	8.3	65.8	5.8	67.3
CSR can help companies to coordinate and bring together	12.1	53.3	19.6	45.3
CSR can only be successful in the case of large companies	41.2	30.1	48.9	30.0
CSR implementation is expensive	14.7	48.4	29.4	37.6

Source: own survey

Considering the comparison of the ratio of agree (4) and strongly agree (5) with strongly disagree (1) and disagree (2) answers (Table 8) the followings can be concluded:
- both females and males believe that CSR has an important marketing communication role,

- about the half of respondents believe that CSR is towards sustainability,
- the proportion who disagree with the important communication role and the contribution to achieving sustainability is low,
- respondents do not think that CSR is for greenwashing,
- the opinions are diverse about the applicability of CSR beyond large corporations, there is a high ratio of respondent who does not agree with the related statement of the survey.

A more comprehensive visual representation of the results is available by multidimensional scaling (MDS). It is an exploratory data analysis technique that can be used in testing the hypothesized existence of particular dimensions or structures within a data set (Borg & Groenen, 2005). However, it should be noted that despite the flexible characteristic of MDS techniques and its relative freedom from strict theoretical boundaries, the interpretation of results could be highly subjective. Even so, MDS may help to explore the latent, hidden dimensions behind the decisions on the content on CSR.

The results of PROXSCAL method for the total sample is presented if Figure 4; evaluation matrix is generated by SPSS based on the survey responses. S-stress value (.00137) is lower than .05 that suggests that model includes all relevant information. Since the scattering of the residual plots in the Shepard-diagram (Figure 5) is low, the distortion of the model is not remarkable, and the two-dimensional model is applicable.

Fig 4: MDS solution for total sample
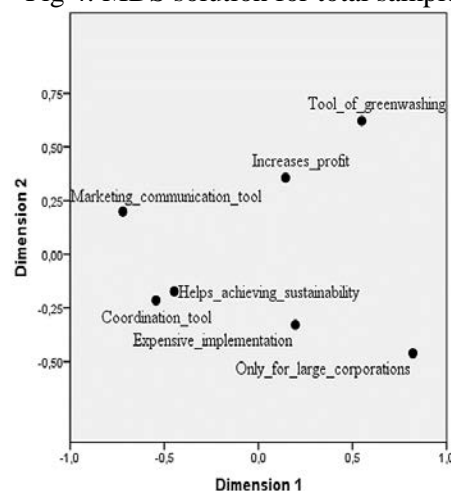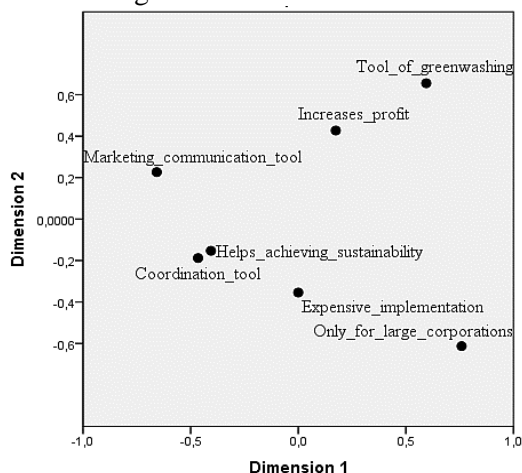

Source: SPSS output

Fig 5: Residual plot for total sample
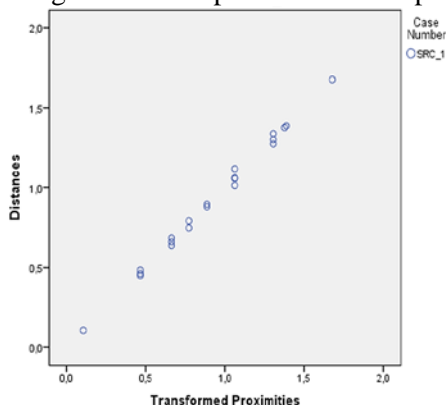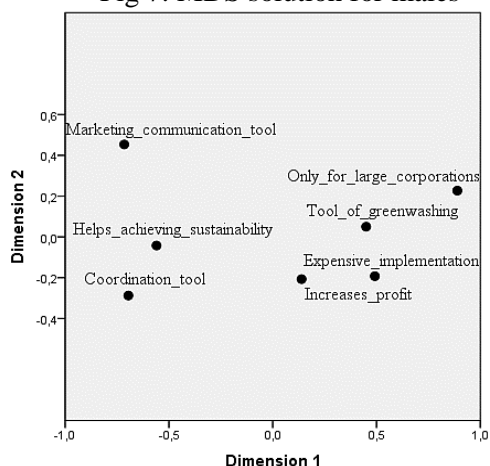

Source: SPSS output

Differences between females' (Figure 6, S-stress=.00142) and males' results (Figure 7, S-stress=.0067) are well presentable by MDS method.

Fig 6: MDS solution for females

Source: SPSS output

Fig 7: MDS solution for males

Source: SPSS output

Comparing the patterns in the figures above allows the conclusion that male's opinions are less scattered. The breakdown of the model elements is similar by the first dimension. We found that this dimension describes the level of responsibility. Business responsibility dominates from the zero to the right; and the interest of others appears from the zero to the left. In summary, Dimension 1 is to interpret as 'Social vs. business responsibly'.

Defining the meaning of Dimension 2 on the vertical axis was more challenging in a way that fits both females' and male's model. Checking the detailed distributions (summarized in Table 8) and mean values (Figure 3) of the responses for explaining the gender differences, we found that it specifies the distances by the trust in CSR. In summary, Dimension 2 is to interpret as 'Confidence vs. skepticism'.

3.4 CSR motivations of corporations

The list of CSR motivations in the survey focuses on business-related issues. Since a simple ranking method was used in the survey, checking the group level consensus is based on the average value of the individual rank numbers by questions (Table 9).

Lower values show that more respondents judged the issue more important than other ones. The minimum value ($x_{min}=1$) is achievable in case each respondent marked it as the most important. In addition, the distributions of rank numbers allow analyzing the preferences by gender (Figure 8 and 9).

Table 9: Judgment on corporate CSR motivation (mean values based on 1 to 5 scale)

|	Females		Males	
	mean value	rank	mean value	rank
Attracting and convincing customers	2.42	1.	2.45	1.
Profit-making	2.65	2.	2.89	2.
Because other companies are also doing such a thing	4.14	5.	3.80	3.
Greenwashing and hiding the environmental and social problems	4.38	6.	4.19	6.
Solving environmental and social problems	3.66	3.	3.85	5.
Cost reduction	3.76	4.	3.82	4.

Source: own survey

Fig 8: Distribution of rankings, female respondents (%)
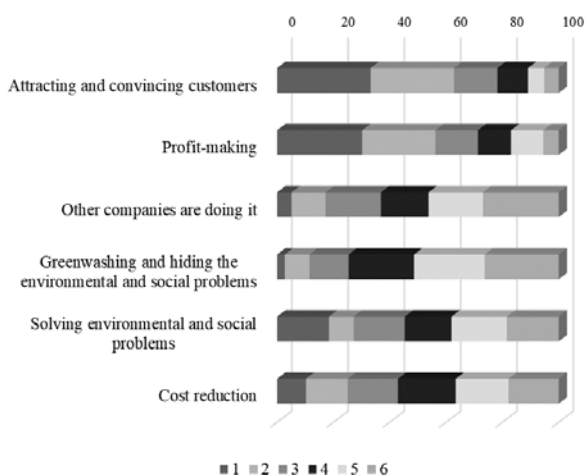
Source: own survey

Fig 8: Distribution of rankings, male respondents (%)
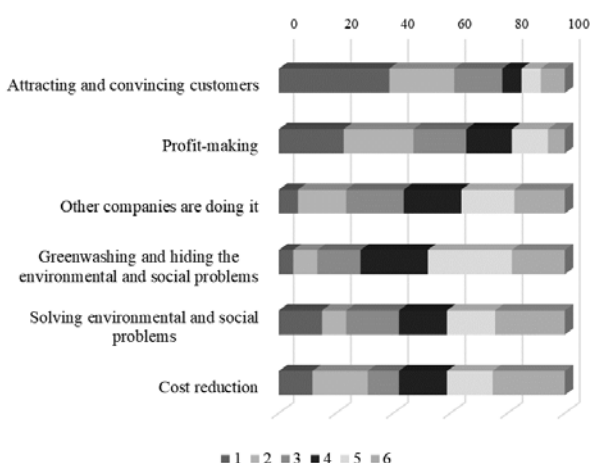
Source: own survey

Table 10: Significance test of results on corporate CSR motivations

	Chi-square	sig.
Attracting and convincing customers	3.889	.566
Profit-making	3.841	.573
Because other companies are also doing such a thing	8.330	.139
Greenwashing and hiding the environmental and social problems	4.424	.490
Solving environmental and social problems	3.597	.609
Cost reduction	6.303	.278

Source: own survey

Both in female and male respondents' ranking 'Attracting and convincing customers' is on the first place, followed by profit making. 'Solving environmental and social problems' is on the third place by females and only on the fifth place by males. It must be noted that males' values are closer to each other, which suggests a less obvious group-level preference order. Significance test of cross-tabulation about the markings does not show significant differences between females and males in case of any elements (Table 10).

Results show that the respondents consider CSR as the tool of corporate growth and there are very different opinions about its role as problem-solving tool. Nevertheless, greenwashing or imitation of other corporations are at the end of the ranking.

There are not strong correlations to find among the results of Sperman's non-parametric rank correlation test (see Appendix 2).

3.5 Additional tests

Research database allows more analysis options than highlighted in this paper. We run a number of tests including ANOVA analyzes by various grouping criteria; and factor analysis. Significant differences could not be identified even in case of CSR knowledge level. The statement 'CSR is an excellent marketing tool' was an exception by study level and CSR knowledge level.

4 Conclusion

4.1 General experiences

The hypothesis of the research says that females' and males' perceptions and attitudes to CSR are different. Based on the survey we can formulate four main conclusions; however, interpretations must take into consideration the limitations of the research:
- females are more sensitive to CSR issues than males,
- perception of global problems differs significantly by gender,
- respondents are uncertain about the content and role of CSR,
- CSR is mainly a business tool.

The difference in responsiveness between females and males raises whether education requires two different strategies for them or a common solution is available. Although, there are significant differences by gender in the perception of the global

problems among the female and male Hungarian business students, the differences and explanatory powers measured are not great, so a common denominator in designating education objectives and methods is accessible.

4.2 Gender differences

Taking the increase in the proportion of female leaders and managers into consideration, a progression of corporate CSR initiations is to expect.

Based on the list of global problems, results show that female respondents usually keep social problems more relevant than environmental ones. Their worry about starvation and crime is significantly higher than in case of male respondents. The result suggests the females have a human-based approach to the sustainability problems, while males have a technology-oriented one. A detailed analysis using various grouping criteria confirms the experiences. Checking the results by these criteria a higher level of worry is observable parallel with the age in case of depletion of energy sources and still the opposite in case or starvation, crime and air pollution. In our interpretation it suggests that the focus of attention and responsiveness decreases with time.

Results on the attitudes to CSR show similar patterns by gender, but some differences are significant. Females have a greater faith in the successfulness of CSR in achieving a higher level of sustainability and in coordinating related initiations. However, higher costs and more chance for utilizations as a profit-boosting tool is also to see in case of females. The overall picture allows the conclusions that females are more open and more sensitive to CSR issues than males. Despite that, females seem to have a less clear picture about assigning the role of CSR.

MDS analysis shows that there are lower distances in males' than in females' judgement on the content of CSR. The influencing factors in the development of opinions we found two dimensions:
- business vs. social content of the responsibility,
- trust in CSR, confidence vs. skepticism.

The results on corporate CSR motivations (Chapter 3.4) confirms the conclusions above. Females less believe that CSR is not a greenwashing tool than males; and they do not think that the need for following other corporation is an important motivator of the initiations.

Based on the above, corporations managed by females may show more openness towards CSR issues.

4.3 Further challenges

According to the long and diverse development of concepts for corporate social responsibility as well as its incorporation into business strategies and communication, Carroll (1999) foreshadows that CSR will remain as an essential part of business language and practice. The challenge is to fill it up with proper content that is both acceptable and promotes the goals of the community.

Respondents' judgement (Chapter 3.3) on CSR confirms the responsibility of education. Giving a clear knowledge base about sustainability and CSR is inevitable, including the problems, concept and tools.

Nevertheless, the differences of responsiveness between females and males raises whether education requires two different strategies for them or a common solution is available. We believe that common way is viable. Courses and subjects those rely on teamwork (e.g. project management) may cover initiations. A project-work needs the cooperation of various fields of knowledge. Proper assignment of project roles and tasks can utilize the approach of both females and males. E.g. in case of a project with impact on climate change, females may have a higher influence on the decisions (Berényi & Deutsch, 2017).

Moreover, it should not be ignored that the expectations of the stakeholders, the stock exchange or the banking system (available credit facilities) fundamentally influence the limits of corporate initiations. It is an interesting problem, whether these stakeholders may support the new directions in CSR initiations, or female leaders and managers may have to drop the ideas.

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Appendix 1: Judgement on CSR - ANOVA table (source: SPSS output of own survey)

		Sum of Squares	df	Mean Square	F	Sig.
CSR can help to achieve the goals of sustainable development	Between Groups	5.076	1	5.076	6.813	.009
	Within Groups	808.359	1085	.745		
	Total	813.435	1086			
Another tool for companies to generate profit	Between Groups	7.016	1	7.016	6.964	.008
	Within Groups	1093.175	1085	1.008		
	Total	1100.191	1086			
These actions represent only greenwashing (main problems are hidden)	Between Groups	.168	1	.168	.145	.703
	Within Groups	1255.994	1085	1.158		
	Total	1256.162	1086			
Excellent marketing communication tool	Between Groups	.303	1	.303	.343	.558
	Within Groups	958.621	1085	.884		
	Total	958.924	1086			
CSR can help companies to coordinate and bring together	Between Groups	10.557	1	10.557	12.634	.000
	Within Groups	906.640	1085	.836		
	Total	917.198	1086			
CSR can only be successful in the case of large companies	Between Groups	3.458	1	3.458	2.406	.121
	Within Groups	1559.419	1085	1.437		
	Total	1562.878	1086			
CSR implementation is expensive	Between Groups	29.368	1	29.368	25.646	.000
	Within Groups	1242.474	1085	1.145		
	Total	1271.842	1086			

Appendix 2: Judgment on corporate CSR motivation – matrix of Sperman's non-parametric rank correlations (source: SPSS output of own survey)

		Attracting and convincing customers	Profit-making	Because other companies are also doing such a thing	Greenwashing and hiding the environmental and social problems	Solving environmental and social problems	Cost reduction
Attracting and convincing customers	Female	1.000	.061	-.052	-.238**	-.232**	-.407**
	Male	1.000	.150	-.138	-.251**	-.254**	-.404**
Profit-making	Female	.061	1.000	-.291**	-.107*	-.486**	-.125*
	Male	.150	1.000	-.375**	-.164	-.501**	-.115
Because other companies are also doing such a thing	Female	-.052	-.291**	1.000	-.067	-.202**	-.305**
	Male	-.138	-.375**	1.000	-.099	-.044	-.315**
Greenwashing and hiding the environmental and social problems	Female	-.238**	-.107*	-.067	1.000	-.185**	-.223**
	Male	-.251**	-.164	-.099	1.000	-.155	-.141
Solving environmental and social problems	Female	-.232**	-.486**	-.202**	-.185**	1.000	-.046
	Male	-.254**	-.501**	-.044	-.155	1.000	-.106
Cost reduction	Female	-.407**	-.125*	-.305**	-.223**	-.046	1.000
	Male	-.404**	-.115	-.315**	-.141	-.106	1.000