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Magdalena Węglarz

ORCID: 0000-0003-4201-7225

Wrocław University of Science and Technology
magdalena.weglarz@pwr.edu.pl

Edyta Ropuszyńska-Surma

ORCID: 0000-0002-0163-8810

Wrocław University of Science and Technology
edyta.ropuszyńska-surma@pwr.edu.pl

Joanna Zimmer

ORCID: 0000-0003-3060-1432

Wrocław University of Science and Technology
joanna.zimmer@pwr.edu.pl

Which companies among the SMEs operate in accordance with the Sustainable Development Goals

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Abstract

The purpose of the article is to identify the factors that have a significant impact on the decision of SMEs to operate in accordance with the Sustainable Development Goals (SDGs). The identification was made on the basis of data collected in December 2022 during a survey of a sample of 303 SMEs from all over Poland. In order to identify the above-mentioned factors, the following were analyzed: type of business, industry to which the primary economic activity of the surveyed company is assigned, age of the company, type of ownership, scope of activity, organizational and legal form, number of employees, average annual net income. Correlation tests confirmed the hypotheses of the relationship between the number of employees and average annual net income and operation in accordance with the SDGs. Further verification of the relationship, performed using a logit model,

confirmed that average annual net income and industry are significant variables. There is a relationship between these variables and acting in accordance with the SDGs. The chance of making a decision by a company about operating in accordance with the SDGs increases as the average annual net income increases. The probability of operating in accordance with the SDGs is higher if the company operates in the following industries, i.a.: real estate activities, transportation, financial and insurance, construction, agriculture.

1. Introduction

The turbulent environment is compelling companies to act and adapt their business models in order to anticipate emerging trends. Adapting to changes in this environment requires a holistic approach that encompasses defining goals, strategy, and the business model (BM), necessitating the use of more comprehensive management models. In a holistic approach, equal consideration is given to the various elements that impact the operation of an enterprise. Consequently, the concept of a sustainable business model (SBM) or enterprise sustainability has emerged (Zgrzywa-Ziemak, 2019). A company pursues a policy of sustainable development (SD) when it simultaneously strives to achieve business goals, improves the quality of life for various stakeholder groups (e.g., employees, local community), and reduces negative environmental impact. Integrating the Sustainable Development Goals (SDGs) into company's operations leads to the creation of SBM, where SD policy is incorporated into all aspects of the BM.

Based on literature studies and secondary research, it can be observed that sustainability goals are being considered by large multinational companies. A study conducted in technology parks by the authors in 2019 (Ropuszyńska-Surma and Węglarz, 2022) indicated that among small and medium-sized enterprises (SMEs) and start-ups, there are companies that incorporate social and environmental aspects into their business models. The research has shown that the goals of most enterprises align with the conventional trend where an enterprise must first achieve minimum economic goals before pursuing social goals. This conclusion fits the Carroll's Pyramid of Corporate Social Responsibility (CSR) (1991). However, several companies in Poland set an example by prioritizing social goals, thereby serving as a precursor for change in the BM of Polish companies. While the surveyed entities pursue sustainability goals to some extent, the key question is whether these activities are merely a means to an economic goal or a reflection of the value system within the enterprise. The conducted research has provided a rationale for further investigation into SBMs in SMEs.

The following research question was formulated: If companies choose to be guided by sustainability goals in their operations, what factors have the biggest impact on the company's decision?

The subjects of the research are SMEs operating in various industries throughout the country. Enterprises that operate in accordance with the goals of the SD

and those that do or do not have measures of the degree of the policy of sustainable development implementation. The subject of the study is the data obtained through surveys.

The aim of the article is to identify the factors that have a significant impact on the decision of SMEs to act in accordance with the Sustainable Development Goals (SDGs).

We tested the following five hypotheses:

- H1: Type of business is associated with the decision to operate in accordance with the SDGs.
- H2: Industry in which the company operates is associated with the decision to operate in accordance with the SDGs.
- H3: Scope of activity of the company is associated with the decision to operate in accordance with the SDGs.
- H4: Number of employees is associated with the decision to operate in accordance with the SDGs.
- H5: Average annual net income is associated with the decision to operate in accordance with the SDGs.

2. Theoretical framework of the research

Since the 1970s, the topic of environmental and social responsibility has been discussed in literature. On this basis, new concepts have been created, e.g. the CSR (Davis, 1960 for Carroll, 1991, 39), the concept of Carroll's Pyramid (1991). A lot of independent regulators and legal regulations have been introduced in economic practice. The international organizations, e.g. the EU (Lisbon European Council, 2000; European Commission, 2010), the World Bank (1981), the UN (2000; 2015), ecological organizations (Meurs, 2012) promote the concept of SD. The millennium goals were formulated in line with this spirit. The UN published the 2030 Agenda for SD in 2015, and the EU plans and supports actions and investments in accordance with the SD policy. To achieve the global macroeconomic aims, the business must be conducted according to these aims. Thus, concepts of sustainable company, responsible or / and sustainable management were parallelly developed in the management science. Sustainability entails achieving a balance among the three pillars: economic, environmental, and social, instead of treating them as independent components. These pillars are intrinsically linked and interdependent, emphasizing the need to address them holistically (Lüdeke-Freund and Dembek, 2017).

We can separate some types of research related to these topics. They focus mainly on following the CSR aspects: (1) reasons why the business introduces the CSR and the SDGs (Cantele and Zardini, 2020); (2) barriers to the implementation of the CSR (Cantele and Zardini, 2020; Bocken and Geradts, 2020); (3) ways

of the SDGs implementation on different levels of management from strategic to operational (e.g. Berrone et al., 2023); (4) sustainable performances for companies (Lopez et al., 2022) and their stakeholders (Turker, 2009), environment (Shahzad et al., 2020). One of the benefits can be the improvement of reputation and other economic variables on the macro level which are important for governments (Lu et al., 2020). Other articles focus on environmental aspects, but they are not discussed in detail due to the article's volume.

Common investigation of the economic, environmental, and business aspects is reflected in the concept of the SBM. The term “sustainable business model” (SBM) has recently been associated with closed-loop BMs (Wells and Seitz, 2005), “Natural Capitalism” (Hawken et al., 2005), social enterprises (Grassl, 2012), Product Service Systems (PSS) (Tukker, 2004; Mont and Tukker, 2006), and new economy concepts, e.g. Blue Economy, (Pauli, 2010), circular economy, and sharing economy. The SBM is characterized by three specific features:

- the essence of SBM is to create value not only for customers, but also for stakeholders, society, and the environment (Abdelkaf and Täuscher 2016);
- SBMs also consider non-financial forms of value, such as social and environmental values (Bocken et al. 2014);
- SBMs also take into account so-called foregone value generated by negative social and environmental impacts (e.g., resource depletion and ungrained value from reusable elements in broken tools) (de Pádua Pieroni et al. 2018).

J. Elkington (1997) made a compelling argument that a BM should encompass social, environmental, and economic values to support SD. Building upon this idea, W. Stubbs and C. Cocklin (2008) were the first scholars to introduce the concept of SBMs, which emphasize the influence of sustainability goals on enterprise's actions and decisions, reflecting a more holistic approach to sustainability. Furthermore, R. Freeman (2010) emphasized the importance of providing social, environmental, and economic values to all stakeholders. As a result, sustainability should occupy a central position in the value proposition of business models. SBMs aim to create and deliver sustainable value to customers and all other stakeholders, while also generating economic value for the enterprise and its stakeholders. The majority of definitions proposed in the literature regarding SBMs, adopt a holistic perspective that recognizes the interconnectedness of value and stakeholders (Boons and Lüdeke-Freund, 2013; Geissdoerfer et al., 2018; Curtis and Mont, 2020). Consequently, this perspective has led to a redefinition of value, wherein the environment and society are considered integral stakeholders within the enterprise's business model. They are not only sources, but also targets for value creation (Schaltegger et al., 2016; Schoneveld, 2020).

The study of the SMB focuses on the following main issues: (1) the influence of the SBMs on social transition (Bidmon, Knab, 2018); (2) the kinds of SBMs (e.g. Matusiak, 2013); (3) the role of the SBM in the diffusion of new and clean technologies, social innovations, organizational forms, and technological advancements

in achieving the SDGs (Boons and Lüdeke-Freund, 2013; Bocken et al., 2014; Lüdeke-Freund et al., 2018); (4) the ways of creating, delivering, and capturing value, as well as altering its value proposition by companies possessing SBMs (Velter et al., 2020; J. Shakeel et al., 2020).

In the following part of our research, we would like to identify significant features of the Polish SMEs which have a significant impact on the decision of these companies to act in accordance with the SDGs.

3. Research methodology

The results presented in this article are a part of a wider study focused on SBM in Polish SMEs. The concept of this research is based on the Triple Layered Business Model Canvas proposed by Joyce and Paquin (2016). The research was conducted by a team from WUST¹ in December 2022 among 303 SMEs.

In order to collect data, a survey questionnaire (CAWI) was made including about 200 questions dedicated to business, environmental, and social layers, in accordance with the Canvas pattern. The first part of the questionnaire was metric. Taking into consideration this article's aim and its limited volume, only the metric is important. It consists of 8 questions which provide basic information (Table 6, column "Description") about the investigated SMEs, and two questions focus on following issues respectively: (1) whether the SMEs take into consideration the SDGs in their activities; (2) whether the SMEs have systems to measure the degree to which an SD policy is implemented. The term "sustainable development policy" was defined in the questionnaire.

Only managers or employees in managerial positions filled in the survey. Almost all of the questions from the metric were closed-ended. Only one was open-ended and one was semi-open. The column "Values" in Table 6 informs what options the respondents could choose from. Only one question – about the kind of business – was a multiple-choice question.

Enterprises were randomly selected from a nationwide Ariadna research panel and the sample is representative. Its structure, according to the main features, are presented in Section 4.1 of this article.

The data collected within the survey underwent a correlation analysis to understand the relationship between endogenous and exogenous variables (Table 6). This involved using the V-Cramer test to analyze the associations between variables. To confirm the observed relationships and identify which exogenous variables have a significant impact on the endogenous variable, the logit model (LM) was used, as the endogenous variable is dichotomous (binary). By using the LM, the aim was to identify the factors that significantly influence the decision-making process of

¹ The WUST research team: E. Ropuszyńska-Surma, M. Węglarz, J. Zimmer, K. Walecka-Jankowska, P. Kubiński and R. Kamiński.

SMEs to operate in alignment with the SDGs. This approach helps in understanding the factors that play a crucial role in such decision-making processes. To conduct the statistical analysis and build the LMs, the SPSS software and the Gretl program were used.

4. The research results: Identification of significant factors

4.1. Correlation analysis between variables

Analyzing the relationship between the type of business and operating in accordance with the SDGs, one can notice (Table 1) that the largest percentage of companies applying SD policy is among R&D companies, and the smallest is among service companies. However, when analysing these values in relation to the population as a whole, we no longer see a similar relationship. Total number of all companies is 303, but companies could mark different activities and not just one. Therefore, the values are greater than 100%.

Table 1. Companies operating in accordance with the SDGs by type of business

Type of business		R&D	Manufacturing	Commerce	Service	Other	Total
Is the company guided by sustainability goals in its operations?	Yes	14	44	44	100	2	178
	No	6	29	25	76	2	125
Total		20	73	69	176	4	303

Source: own study.

When considering the issue of scope of activity, there are no major differences between the groups when it comes to operating in accordance with the SDGs (see Table 2).

Table 2. Companies operating in accordance with the SDGs by scope of activity

Scope of activity		Local	Regional	National	International	Total
Is the company guided by sustainability goals in its operations?	Yes	41	26	80	31	178
	No	28	26	49	22	125
Total		69	52	129	53	303

Source: own study.

Taking the criterion of the number of employees (Table 3), it was noted that the largest number of companies using the SD policy is among companies with more than 150 employees and the smallest among companies with fewer than 10 employees.

Table 3. Companies operating in accordance with the SDGs by number of employees

Number of employees		Less than 10	10–49	50–149	150–249	Total
Is the company guided by sustainability goals in its operations?	Yes	68	53	37	20	178
	No	65	30	23	7	125
Total		133	83	60	27	303

Source: own study.

Dividing companies by volume of average annual net income (Table 4), it was noted that the higher the revenue, the greater the number of companies operating under SD goals. However, it is important to note the small size of the research sample for companies with the highest revenue.

Table 4. Companies operating in accordance with the SDGs by average annual net income

Average annual net income		Less than €2 million	€2–10 million	More than €10 million	Total
Is the company guided by sustainability goals in its operations?	Yes	98	56	24	178
	No	94	26	5	125
Total		192	82	29	303

Source: own study.

The Cramer V coefficient, which determines the level of relationship between two nominal variables, of which at least one takes on more than two values, was used to determine the relationship between the variables. Table 5 presents the results of statistical analysis related to the aforementioned variables. We tested all hypotheses, and statistical analysis confirmed all of them. But in case of H1 (type of business – commerce) and H2 (industry) significance level was 10% (in Table 5 this has been marked with one asterisk).

The result of the V-Cramer test indicates that there is no relation between operating in accordance with the SDGs and variables: age of the company, type of ownership, and type of business – research and development.

However the results of the V-Cramer test clearly indicate a significant relationship between the number of employees ($V = 0.408$ with $p\text{-value} < 0.001$) and operating in accordance with the SDGs. The greater the number of employees in a company, the greater the chance that the company will operate in accordance with its sustainability goals. Statistical analysis confirmed hypothesis (H4).

Statistical analysis confirms that hypothesis (H5) about the relation between average annual net income and operating in accordance with the SDGs can be accepted (V-Cramer coefficient = 0.366 with $p\text{-value} < 0.001$). Note that the greater annual net income, the greater number of companies operating in accordance with the SDGs.

Table 5. The results of V-Cramer coefficient for endogenous variable

	V coefficient	Significance
Type of business – Research and development	0.08	0.165
Type of business – Manufacturing	0.148**	0.01
Type of business – Commerce	0.099*	0.086
Type of business – Services	0.122**	0.034
Industry to which the primary economic activity of the company is assigned	0.287*	0.094
Age of the company	0.413	0.412
Type of ownership	0.092	0.463
Scope of activity	0.216**	0.003
Organizational and legal form	0.375***	<0.001
Number of employees	0.408***	<0.001
Average annual net income	0.366***	<0.001

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: own study.

Moreover there is a relationship between operating in accordance with the SDGs and organizational and legal form (V-coefficient = 0.375 with p-value < 0.001) and between scope of activity (V-coefficient = 0.216 with p-value = 0.003). It should be noted that both variables are nominal variables, with k variants. Statistical analysis showed that there may be some relationship between the variables, supporting the hypothesis (H3).

4.2. Logit model

The endogenous variable was determined by respondents' answers to a filter question on whether they are guided by sustainability goals in their actions. Since the endogenous variable is a dichotomous variable, the use of a LM was proposed for further analysis. The purpose of modeling a dichotomous variable is to predict the change in the probability $P(y_i = 1 | X_1 = x_1, X_2 = x_2, \dots, X_n = x_n)$ of deciding to act according to the SDGs caused by a change in the value of one of the explanatory variables (Gruszczyński, 2010, 54–55). An LM was built to investigate which of the explanatory variables has a significant effect on the explained variable and to confirm the observed relationships (see Section 4.1). An endogenous variable was defined as:

- $y_i = 1$, when the company is operating in accordance with the SDGs,
- $y_i = 0$, when the company does not act in accordance with the SDGs or does not know if it is following them.

Table 6 shows the exogenous variables used in the model to explain the endogenous variable, as well as their coding and sample percentage distribution. Exogenous variables are of different types, they are both binary, nominal, and ordinal variables.

Table 6. Description of exogenous variable

Variable	Description	Type of variable	Values	%
<i>AI_r1</i>	Type of business – Research and development	binomial	0=no; 1= yes	93.4 6.6
<i>AI_r2</i>	Type of business – Manufacturing	binomial	0=no; 1= yes	75.9 24.1
<i>AI_r3</i>	Type of business – Commerce	binomial	0=no; 1= yes	77.2 22.8
<i>AI_r4</i>	Type of business – Services	binomial	0=no; 1= yes	41.9 58.1
<i>AI_r5</i>	Type of business – Other	binomial	0=no; 1= yes	98.7 1.3
<i>A2</i>	Industry to which the primary economic activity of the company is assigned	artificial	1=manufacturing, 2=generation and supply of electricity, gas, steam, hot water, and air conditioning, 3=water supply, sewage, and waste management, 4=construction, 5=wholesale and retail trade, 6=transportation, warehouse management, and communications, 7=financial and insurance intermediation, 8=accommodation and food service, 9=information and communication, 10=real estate activities, 11=professional, scientific, and technical activities, 12=agriculture, 13=vehicle repair, 14=education, 15=healthcare and social assistance, 16=culture, entertainment, and recreation, 17=public administration, 18=other	7.9 0.7 2.3 14.2 17.2 5.9 4.0 4.3 8.6 4.0 14.9 2.3 1.7 2.0 3.6 1.0 1.3 4.3

A3	Age of the company	ratio	discrete	
A4	Type of ownership	artificial	1=private, 2=public, 3=cooperative, 4=private-public	81.2 8.2 5.3 5.3
A5	Scope of activity	nominal, 1–4 scale, multi- variant	1=local, 2=regional, 3=national, 4=international	22.8 17.1 42.6 17.5
A6	Organizational and legal form	artificial	1=sole proprietorship, 2=foundation, 3=registered partnership, 4=professional partnership, 5=joint-stock company, 6=simple joint-stock company, 7=civil partnership, 8=association, 9=cooperative, 10=limited liability company, 11=other	44.9 1.3 5.0 2.3 6.9 4.3 5.0 3.3 2.6 22.1 2.3
A7	Number of employees	ordinal, 1–4 scale, multi- variant	1=less than 10, 2=10–49, 3=50–149, 4=150–249	43.9 27.4 19.8 8.9
A8	Average annual net income	ordinal, 1–4 scale, multi- variant	1=less than EUR 2 million, 2= EUR 2–10 million, 3= EUR 10–50 million, 4=more than EUR 50 million	63.4 27.1 7.9 1.7

Source: own study.

The question regarding the type of business was multiple-choice because a company can engage in various types of business, so the variables A1 are regressors (0–1). Explanatory variables such as A2 (Industry), A4 (Type of ownership) and A6 (Organizational and legal form) were converted into 0–1 regressors. The original nominal variable, with k variants, was transformed into $k-1$ artificial variables, and one of the variants was not introduced to the model, but is a reference group for other artificial variables (Górecki, 2010, 65–67). Accordingly, the following were taken as reference groups: in the case of type of business – A1_r5 – other, in the case of type of ownership – A4_4 – private-public, in the case of organizational and legal form – A6_11 – other. In the case of industry, A2_18 – other was initially adopted as the reference group; however, this was subsequently expanded to include a low-frequency, high-diversity thematic subgroup: A2_16 – culture, entertainment, and recreation.

When constructing the regression equation of the LM, all explanatory variables were included which, from the standpoint of the formulated hypotheses, can explain the behavior of the explained variable. The level of significance was 5%. The logarithm of reliability for the full model A with all variables is -178.5048.

The elimination of non-significant variables was done in several steps. The explanatory variables with the highest p-value (higher than 0.2) were removed from the model one by one. A total number of eliminated variables is 19. The logarithm of likelihood ratio for model B is -182.6613. The result of the likelihood ratio test confirmed that the aforementioned variables do not play a significant role in explaining the endogenous variable. The results of estimation of the logit model B are presented in Table 7.

Table 7. The results of estimation of logit model B

Variable	Coefficient	p-value	Significance level	Odds ratio
const	-2.5207	0.0001	***	
A2_1 manufacturing	1.7981	0.0138	**	6.0379
A2_2 generation and supply of electricity	2.5157	0.145		12.3756
A2_3 water supply, sewage, and waste management	1.9811	0.0566	*	7.2507
A2_4 construction	2.1371	0.0015	***	8.4748
A2_5 wholesale and retail trade	1.5547	0.0165	**	4.7338
A2_6 transportation	2.0196	0.0092	***	7.5350
A2_7 financial and insurance	2.6413	0.003	***	14.0312
A2_8 accommodation and food service	1.1025	0.1737		3.0116
A2_9 ICT	1.2383	0.0824	*	3.4497
A2_10 real estate activities	2.5400	0.0044	***	12.6793
A2_11 professional, scientific, and technical activities	1.0997	0.0887	*	3.0033
A2_12 agriculture	2.2473	0.0294	**	9.4618
A2_13 vehicle repair	2.9086	0.0219	**	18.3302
A2_14 education	1.5454	0.1475		4.6896
A2_15 healthcare and social assistance	1.9448	0.023	**	6.9919
A4_2_public ownership	0.9602	0.0606	*	2.6123
A6_4 professional partnership	-1.7115	0.0694	*	0.1806
A8 income	0.8607	<0.0001	***	2.3648

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: own study

Evaluation of collinearity among exogenous variables was done using the variance inflation factor (VIF). The obtained values of 1.062 to 3.54 confirm that there is no collinearity problem.

The McFadden R-square = 0.11. Confusion Matrix allows the determination of measures of model fit such as count R^2 and odds ratio (IS). The closer the count R^2 value is to 1, the better the fit of the model to the empirical data. The model performs well in predicting the phenomenon under study when count $R^2 > 50\%$ (Maddala, 2008). If $IS > 1$, forecasting with the model is better than random forecasting (Kufel, 2013). For model B, the following values were obtained count $R^2 = 65\%$ and $IS = 3.08$.

$$countR^2 = \frac{n_{11} + n_{00}}{N} \cdot 100 = \frac{139 + 58}{303} \cdot 100 = 65\% \quad (1)$$

$$IS = \frac{n_{11} \cdot n_{00}}{n_{01} \cdot n_{10}} = \frac{139 \cdot 58}{39 \cdot 67} = 3.08 \quad (2)$$

Statistical significance was confirmed by the LM (Table 7) in the case of: A8 – income, A2 – industry (real estate activities, transportation, financial and insurance, construction, manufacturing, wholesale and retail trade, agriculture, vehicle repair, healthcare, and social assistance). The obtained results confirmed only hypotheses H2 and H5.

4.3. Significant factor analysis

We do not remove irrelevant variables because their removal floats the deterioration of the parameters of the obtained model. We identify variables that have a greater impact on decision-making to act in accordance with the SDGs. Using the LMs, odds ratios were determined, which is interpreted as a relative chance of occurrence of an event in a given subgroup in comparison with the reference group (Gruszczyński, 2010, 67–68).

Figure 1 shows the odds ratio of the decision to act in accordance with the SDGs by different subgroups of companies. The black line on Figure 1 and 2 represents an odds ratio of 1, which means that the probability of decision-making by particular subgroups is the same as the reference subgroup. The chance of making a decision to operate in accordance with the SDGs increases as the average annual net income increases, averaging 2.4 times.

The greatest chance of making a decision about operating in accordance with the SDGs is among companies in (1) financial and insurance intermediation industry (14.03 times greater than in the reference group), (2) real estate activities industry (12.68 times higher than in the reference group), (3) construction industries (8.47 times higher), (4) transportation industries (7.54 times higher).

Exogenous variables with the medium impact on the explanatory variable are: A2 – Industry (manufacturing; water supply, sewage, and waste management;

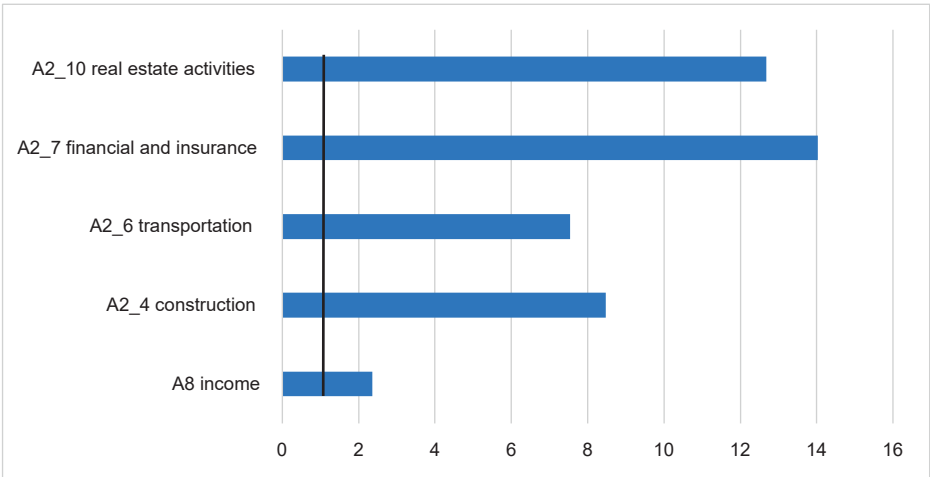


Figure 1. Odds ratio for exogenous variable with significant impact

Source: own study.

wholesale and retail trade; ICT; professional, scientific, and technical activities; agriculture; vehicle repair; healthcare and social assistance), A4 – Type of ownership (public). Figure 2 shows the odds ratio of the decision to act in accordance with the SDGs by various subgroups of companies. The interpretation of the odds ratio for Figure 2 is analogous as for Figure 1.

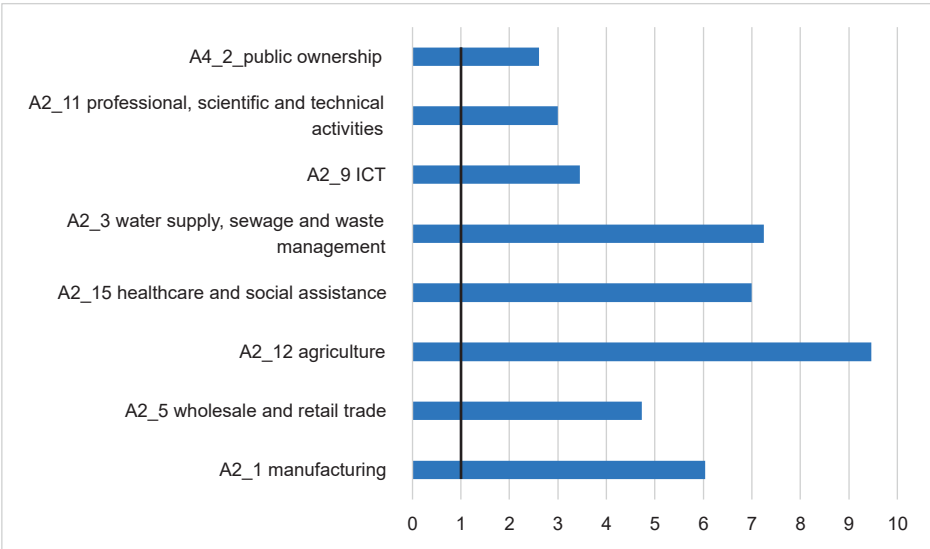


Figure 2. Odds ratio for exogenous variable with medium impact

Source: own study.

Exogenous variables with a negative impact on the explanatory variable are A6_4 professional partnership (see Table 7). Negative impact means that the probability of making decisions by particular groups is lower than for the reference subgroup. The fact that the company is a professional partnership reduces the chance of making a decision to act in accordance with the SDGs by 82% (the odds ratio is equal to 0.18).

5. Conclusions

This paper includes a verification of five hypotheses about the correlation between some characteristics of SMEs and the decision of SMEs to act in accordance with the Sustainable Development Goals (SDGs). These factors are as follows: type of business (H1), kinds of industries (H2), scope of activity (H3), number of employees (H4), average annual net income (H5). V-Cramer test was used to verify these hypotheses, and the logit model was used to confirm the observed relationship between the variables. The statistical analysis confirmed hypotheses H4 and H5. This means that there are relationships between the number of employees and the decision of SMEs to act in accordance with the SDGs (H4) as well as between the average annual net income and the decision of SMEs to act in accordance with the SDGs (H5). These results are similar to the opinion presented by Lu et al. (2020). They indicate that “the dominate of SMEs in industries does not always have positive impact on the penetration of CSR practices, as they have less financial and human resources and are always facing bigger competitions from the market” (Lu et al., 2020). The results of our research among Polish SMEs confirm statistically that the net income and the number of employees are important factors for acting according to CSR.

There is no statistical basis to confirm or reject the H1 and H2 hypotheses, but the V-coefficient results do not constitute a clear foundation to draw a conclusion about the correlation between the scope of activity and the decision of SMEs to act in accordance with the SDGs (H3).

The logit model confirms that the important factors are the following: net income, industry (real estate activities, transportation, finance and insurance, construction, manufacturing, wholesale and retail trade, agriculture, vehicle repair, healthcare and social assistance). The logit model confirmed H2 and H5.

The chance of deciding to act in accordance with the SD goals is greater if the company is in one of the following industries:

- financial and insurance (14.03 times higher),
- real estate activities (the chance is 12.68 times higher),
- agriculture (9.46 times higher),
- construction (8.47 times higher),

- transportation (7.54 times higher),
- healthcare and social assistance (6.99 times higher),
- manufacturing (6.04 times higher),
- wholesale and retail trade (4.73 times higher).

As the average annual net income of a company increases, its likelihood of operating in line with the SDGs also increases, with an average increase of 2.4 times. For public companies, the likelihood of making a decision to act in accordance with the SDGs is 2.61 times higher compared to private-public companies. On the other hand, if a company is a professional partnership, the chance of making a decision to act in line with the SDGs decreases by 82%.

According to Carroll's Pyramid the companies first achieve the economic responsibility, and next higher levels of responsibilities such as: legal, ethical, and philanthropic. All of them are related to the SBM. It seems that the results of our research dedicated to private businesses are in line with the Carrolls' Pyramid because the higher average net income of SMEs, the bigger the likelihood that they operate in accordance with the SDGs. The public companies are provided with funds usually – not huge, but more stable and secure than the private sector. A professional partnership is characterized by special competences and skills, and small-scale activities. They have strong relationships with employees, consumers, and other stakeholders and depend on them. To exist, they should take into consideration employees, consumers, and the environment. It seems that if they gain a higher income, they are more independent from the stakeholders. Maybe this is the reason for a negative correlation between the income and them operating in accordance with the SDGs. This statement needs deeper and wider research.

In Poland, we can observe a positive trend that not only huge corporations which are obligated to implement the SDGs, but also certain kind of the SMEs are operating in line with the SDGs. The open question is about the reasons. The SMEs in Poland, especially from the industries mentioned above, conduct their business adhering to the SDGs. There are SMEs from industries which influence the environment (e.g. transportation or agriculture industries), or have strong relationships with society and their clients (e.g. financial and insurance or healthcare and social assistance), as well as affect both these aspects, e.g. construction or real estate activities. Thus, it seems logical that they declare operating in line with the SDGs because they are forced by legislation or competition in the market, including the willingness to distinguish themselves, e.g. by reputation. This sentence could serve as inspiration for continuing our research.

The beneficiaries of the article could be researchers, students, and policy-makers at regional, state, and international levels. For the last group of beneficiaries, the paper could be helpful in identifying entities needing support in implementing the SDGs.

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