Ekonomia — Wroclaw Economic Review 29/3 (2023)
Acta Universitatis Wratislaviensis
No 4193

https://doi.org/10.19195/2658-1310.29.3.6

Joanna Zimmer
ORCID: 0000-0003-3060-1432
Wroclaw University of Science and Technology
joanna.zimmer@pwr.edu.pl

Magdalena Węglarz
ORCID: 0000-0003-4201-7225
Wroclaw University of Science and Technology
magdalena.weglarz@pwr.edu.pl

Edyta Ropuszyńska-Surma
ORCID: 0000-0002-0163-8810
Wroclaw University of Science and Technology
edyta.ropuszynska-surma@pwr.edu.pl

Sustainable business models in SMEs: The customer's perspective

Date of submission: 23.07.2023; **date of acceptance:** 24.09.2023

JEL classification: D, D8, D21, D81, L, L21, M1, M14, M19, Q01

Keywords: sustainable business model, sustainable development goals (SDG), SME sector, customer perspective, logit model (LM)

Abstract

The main purpose of the study is to identify the relationship between sustainability goals and measures of the degree of sustainable policy implementation, as well as the customer perspective as determined by the business model (BM) template of A. Osterwalder and Y. Pigneur. In the conducted research, the customer perspective takes into account five elements of the BM and each element was examined by several characteristics. The elements of the BM from the customer perspective are: customer segment, value proposition, distribution channels, customer relationships, and revenue. The study used the authors' survey questionnaire, in which respondents, who were enterprises in the SME sector, answered questions about their own BM divided into three layers – business, social, and environmental. The results were statistically analysed using SPSS STATISTIC 28 software and a logit model was developed to verify the significance of the relationship between the binary variables studied. 303 enterprises participated in the survey, 59% of which were enterprises guided

by sustainability goals (SGs) in their BMs. However, only 27% of those surveyed had measures of the degree of sustainable policy implementation.

The conducted research confirmed that acting in accordance with SGs is strongly related to customer-oriented elements of the business model, such as (1) customer segregation by sex or by level of environmental awareness, (2) value proposition – an environmental orientation, (3) distribution channels – direct sales online, (4) customer relationships through dedicated personal assistance or automated service based on personal customer profiles, (5) revenue – sales of products and services. Slightly different results were obtained for using measures of the degree of the SD policy implementation, where the highest correlation occurred for: (1) main customers – manufacturing entrepreneurs, (2) customer segregation by end-user experience or by level of involvement in socially important issues, (3) value proposition – strengthening democracy, (4) distribution channels – wholesale stores are run by partners, (5) customer relationships through self-service or automated service based on personal customer profiles or involving customers in the product development process, (6) revenue – rental/lease/leasing or licenses.

1. Introduction

The issue of sustainable development (SD) is now increasingly appreciated by society, so enterprises which do not act in accordance with SD may lose their competitive position (Zott, Amit and Massa, 2011, 1020), customers (Jansson, Nilsson, Modig and Hed Vall, 2017, 9), business partners or investors (Bocken and Geradts, 2020, 2). The pressure to integrate sustainability goals (SGs) into organizational operations is also coming from managers (Farias, Farias, Krysa and Harmon, 2020 4), who are looking for viable solutions which address the needs of organization stakeholders, e.g., reducing costs, implementing green solutions or finding ways to respect the environment. As a result, enterprises are thinking more often than before about how to adapt their business model (BM) to new sustainability challenges.

Integrating sustainable development goals (SDGs) into BM is a particular challenge for enterprises in the SME sector. Enterprises of this type often lack the financial resources, management capacity, knowledge, infrastructure, and employees to deal with the SD challenge (Macchion, Toscani and Vinelli, 2023, 564; Battistella, Cagnina, Cicero and Preghenella, 2018, 2). However, the flexibility of SME enterprises can facilitate the implementation of the SDGs (Cantele and Zardini, 2020, 130). The research reveals that these types of organizations are not as committed as large enterprises to integrating environmental and social aspects as strategic considerations into their BMs (Battistella et al. 2018, 2; Jansson et al. 2017, 10).

The authors conducted a systematic literature review of articles available on the EBSCO aggregation website in three stages:

1. Searching for articles in the databases using the keywords “sustainable business models”, “sustainable development and customer”, “sustainable business models and SMEs”, and the number of citations (most frequently cited articles) in several iterations.

2. Reading titles and abstracts to select relevant articles – about 350 articles.
3. Reading selected articles.

Despite many studies in the field of sustainable business models (SBM), a systematic review of it identified the following research gaps regarding: (1) Relatively small number of studies on the inclusion of SD objectives by enterprises from SMEs in BMs, and lack of such studies in Poland. (2) There is a lack of research covering the basic elements of the business activities of SMEs that directly affect customers and take into account the SDGs. (3) There is a lack of research to identify whether the SDGs are reflected in measures of the degree of sustainable policy implementation from a customer perspective. In this context, the purpose of the article is to identify the relationship between the objectives of sustainable development and measures of the degree of sustainable policy implementation and the customer perspective as determined by the BM template of A. Osterwalder, Y. Pigneur, and C. Tucci (2005), in enterprises from the SME sector operating in Poland.

2. Sustainable business models in enterprises from the SME sector

Incorporating SGs into BMs is a very timely and widely discussed topic, both in academia and the business community (e.g. Bocken and Geradts, 2020; Muñoz-Torres et al. 2019). "The common denominator of these works lies in the effort to understand how companies can nowadays rethink their business models by integrating them with the new principles of social and environmental sustainability" (Macchion et al. 2023, 565). However, few of these studies involve enterprises in the SME sector (Battistella et al. 2018, 4). Taking a macro perspective, it is enterprises in the SME sector that are key to sustainable development (Jansson et al. 2017, 70), because they have a significant impact on the local environment as well as local and domestic economy i.e. by creating workplaces. The SMEs are able to flexibly and quickly respond to changes in customer needs (Buffa, Franch and Rizio, 2018, 658).

Considering sustainability as part of new BMs is not just about adopting specific practices or initiatives, rather it is a transformation process which involves the entire organization. The following barriers to implementing SBMs can be identified in SMEs (Hillary, 2004): insufficient resources, lack of understanding of the benefits of implementing sustainability, negative attitudes, and organizational culture. F. Buffa, M. Franch and D. Rizio (2018) consider that problems with implementing SGs into BMs are due to the small size of these enterprises, and in particular the reluctance to implement innovation, the lack of a long-term strategy, or problems with accessing external financing for operations.

3. The customer's perspective in the business model

Sustainability is a concept that is contributing to the redefinition of BMs (Osterwalder et al. 2005, 1) due to the approach of enterprise customers, who are increasingly considering environmental and social aspects when making purchasing decisions. Customer in BMs is of particular importance (Wirtz, Gottel and Daiser, 2016, 24), because, according to Teece (2007, 1329), "the business model reflects a hypothesis about what customers want, and how an enterprise can best meet those needs, and get paid for doing so*"* (Zott et al. 2011, 32). This reflection of customer needs in BMs stems from the market orientation of enterprises, which boils down, according to Oakley (2011) to three basic elements: (1) putting customer needs first, (2) coordinating and planning marketing activities across the organization, and (3) focusing on the environment (Oakley, 2011, 1097; Janssons et al., 2017 72). Market-oriented enterprises will notice the sustainability needs of customers and the environment more quickly, and through their focus on these needs will be more likely to incorporate SGs into their operations (González-Benito and González-Benito, 2008; Janssons et al. 2017, 73). In conclusion, there are many studies in the literature proving that the customer perspective is important for the application of SBMs (e.g. Janssons et al. 2017, 73). Therefore, the authors of the study also focused on it.

In this study, the customer perspective of the BM was defined using the BM template of A. Osterwalder, Y. Pigneur and C. Tucci (2005). This perspective is composed of elements such as: customer segment, value proposition (VP), distribution channels, customer relationships, and revenues. The VP is the heart of the Canvas BM and it should be in keeping with the individual values of clients. It seems that not only economical, but also environmental aspects and the quality of life are important. The SMEs' MBs should follow this trend and focus on SDGs. Thus, two main research hypotheses were formulated. (1) H1: The customer-focused elements of the business model are associated with the decision to operate in accordance with the SD goals. (2) H2: The customer-focused elements of the business model are associated with measures of the degree of SD policy implementation. The customer-focused elements of the business model take into account five elements of the business model, which are: customer segment, VP, distribution channels, customer relations, and revenue. Therefore, each research hypothesis was decomposed into five sub-hypotheses.

4. Research methodology

The research used a proprietary survey questionnaire, in which respondents, representing enterprises in the SME sector, answered a series of questions about their

own BMs, divided into three layers – economic, social, and environmental – according to the Joyce's and Paquin's proposal (2016). The questionnaire was divided into four groups – metrics and the three layers mentioned above. Two metric questions were appropriately related to the hypothesis. The question: "Does your enterprise take into consideration the sustainable development goals in its activities?" was correlated with H1. To avoid misunderstanding, the sustainable development policy was defined in the questionnaire. The following question was linked with H2: "Are there systems to measure the degree to which a sustainable development policy is implemented (e.g. emission monitoring) in your company?"

In those questions, the respondents could choose one of three options: "yes", "no" or "I don't know". The researchers did not investigate those systems, thus the questions allow identifying only opinions, not facts.

The study was conducted in December 2022 by the research team from WUST[1]. The research sample included 303 SMEs (the survey was filled in by people in managerial positions) operating in Poland. Enterprises were randomly selected from a nationwide Ariadna research panel. Thus, the sample is representative. Its structure according to main business activities is as follows: production – 58%, commercial – 23%, service – 24%, and others – 1%.

The data collected in the study was analysed to find the relationship between endogenous and exogenous (explanatory) variables (Table 1) firstly by using Pearson's chi-square test. Then a logit model (LM) was used to confirm the relationships and to identify which exogenous variables have a significant impact on the endogenous variable. The significance level p is assumed to be 0.05.

As the endogenous variable is dichotomous (binary), the LM was appropriate for this analysis. By using the LM, the aim was (1) to identify the factors that significantly influence the decision-making process of SMEs to operate in alignment with SDGs; (2) to identify the factors that significantly influence the decision-making process of SMEs to use measures of the degree of SD policy implementation. The exogenous variables were grouped according to Canvas template (Table 1).

This approach helps in understanding the factors that play a crucial role in such decision-making processes. The statistical calculations were conducted using the STATISTIC 28 software and the Gretl program.

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

5. Research results

5.1. Goals and measures of sustainable development from the customer's perspective

The elements of a BM from a customer perspective according to the Canvas template are: B3 – customer segment, B4 – value proposition, B5 – distribution channels, B6 – customer relationships and B7 – revenue.

The chi-square independence test was conducted for all the variables (Table 1).

Table 1. The chi-square test results

		Operating in accordance with the SDGs			SD realization – measures		
Groups of variables	Description (Items)	Chi-square	df	p-value	Chi-square	df	p-value
B1 – key customer	Households				4.208	1	0.04
	Manufacturing entrepreneurs				10.005	1	0.002
B3 – customers' criteria	Gender	5.079	1	0.024			
	Education				6.557	1	0.01
	End-user experience				12.501	1	<0.001
	Geographic market				4.75	1	0.029
	Level of environmental awareness	12.433	1	<0.001	19.322	1	<0.001
	Level of involvement in socially important issues	6.969	1	0.008	14.566	1	<0.001
	Those who value their own and others' time	10.474	1	0.001	14.475	1	<0.001
	Valuing family-friendly values				7.204	1	0.007
	Value system				6.11	1	0.013
	Influence decisions on pro-social policy creation	7.898	1	0.005	6.942	1	0.008
	Influence decisions on the creation of pro-environmental policies				6.37	1	0.012
	Lack of criteria	5.733	1	0.017	11.701	1	<0.001

B4 – value proposition	Reliability of supply	14.723	4	0.005			
	Quality of delivery	26.666	4	<0.001	13.584	4	0.009
	Availability of products	24.79	4	<0.001	4.572	4	0.003
	Innovation of offerings	29.475	4	<0.001			
	Efficiency/effectiveness	20.968	4	<0.001			
	Convenience/usability	21.44	4	<0.001			
	Reduction of transaction risk	22.673	4	<0.001			
	Reduction of transaction costs	23.474	4	<0.001	11.907	4	0.018
	Customer orientation	17.662	4	0.001			
	Environmental orientation	74.494	4	<0.001	30.43	4	<0.001
	Product/service safety	32.167	4	<0.001			
	Developing innovative technologies	34.746	4	<0.001	19.247	4	<0.001
	Individualization of the offer	22.535	4	<0.001	13.305	4	0.01
	Stable price	15.009	4	0.005			
	Access to reliable information about the company's offer and activities	33.443	4	<0.001			
	Ensuring protection of personal data and privacy	24.714	4	<0.001	10.783	4	0.029
	Ability to secure data after product use / safe disposal	40.328	4	<0.001	16.202	4	0.003
	Creation of shared values	40.2	4	<0.001	15.604	4	0.004
	Creation of social capital	36.208	4	<0.001	30.059	4	<0.001
	Strengthening democracy	41.052	4	<0.001	26.952	4	<0.001
	Creating attitudes of sharing	32.459	4	<0.001	26.987	4	<0.001
B5 – distribution channels	We have direct sales	22.056	4	<0.001	31.345	4	<0.001
	We have direct online sales	19.906	4	<0.001	27.984	4	<0.001
	We have our own stores	18.257	4	0.001	25.83	4	<0.001
	We have partner stores	16.396	4	0.003	43.621	4	<0.001
	We have wholesale stores run by partners	18.129	4	0.001	50.731	4	<0.001

B6 – customer relationships	Personal assistance	21.665	4	<0.001			
	Dedicated personal assistance	23.215	4	<0.001			
	Self-service	19.003	4	<0.001	47.521	4	<0.001
	Automated service based on personal customer profiles	38.5	4	<0.001	47.986	4	<0.001
	Online user communities	22.414	4	<0.001	22.855	4	<0.001
	Co-creation – involving customers in the product development process	18.422	4	0.001	19.866	4	<0.001
B7 – revenues	Sales of products and services	10.846	4	0.028			
	Usage fee	36.42	4	<0.001	33.338	4	<0.001
	Subscription fee	13.985	4	0.007	28.118	4	<0.001
	Rental/lease/leasing	17.662	4	0.001	59.169	4	<0.001
	Licenses	18.902	4	<0.001	37.605	4	<0.001
	Brokerage fee	10.347	4	0.035	28.04	4	<0.001
	Advertising	17.56	4	0.002	26.262	4	<0.001

Source: own study.

In the case of the B3 variable, the test showed a statistical relationship of SDG with six variables in the segmentation category, and in the case of SD realization – measures with eleven variables. For variables B4, B5, B6, and B7 the test showed a statistical correlation of SDGs with all the variables analysed. In the context of SD realization – measures, variable B4 exhibited a correlation with twelve variables. Variable B5 displayed statistical dependence with measures across all variables, while for B6 there was statistical dependence with four variables and for B7 with six variables. These results required verification, which was done using a LM.

5.2. The customer-focused elements of BM

The LM was used to examine which variables have a significant impact on decisions to operate in accordance with the SDGs (model A), and which variables have a significant impact on decisions to use measures of the degree of the SD policy implementation (model B).

In model A, the endogenous variable was defined as:

$y_i = 1$, when the company operates in accordance with the SDGs;

$y_i = 0$, when a company does not act in accordance with the SDGs or does not know if it follows them.

In model B, the endogenous variable was defined as:

$z_i = 1$, when the company uses measures of the degree of SD policy implementation;

$z_i = 0$, when a company does not use measures of the degree of SD policy implementation or does not know if it follows them.

As explanatory variables, implemented in LMs (Table 2), the following were adopted: customer segment (variables B1 and B3), value proposition (B4), distribution channels (B5), customer relations (B6), and revenue (B7).

Table 2. The explanatory variables

Groups of variables	Description (Items)	Values
B1 – key customer	1. Households 2. Manufacturing entrepreneurs 3. Service entrepreneurs 4. Local government units 5. Others	0=no; 1=yes
B3 – customers' criteria	1. Retail and wholesale 2. Age 3. Gender 4. Education 5. End-user experience 6. Geographic market 7. Level of wealth 8. Level of environmental awareness 9. Social sensitivity 10. Level of involvement in socially important issues 11. Those who value their own and others' time 12. Valuing family-friendly values 13. Value system 14. Influence decisions on pro-social policy creation 15. Influence decisions on the creation of pro-environmental policies 16. Companies and individuals 17. Lack of criteria	0=no; 1=yes

B4 – value proposition	1. Reliability of supply 2. Quality of delivery 3. Availability of products 4. Innovation of offerings 5. Efficiency/effectiveness 6. Quality of products/services 7. Convenience/usability 8. Reduction of transaction risk 9. Reduction of transaction costs 10. Customer orientation 11. Environmental orientation 12. Product/service safety 13. Developing innovative technologies 14. Individualization of the offer 15. Stable price 16. Access to reliable information about the company's offer and activities 17. Ensuring protection of personal data and privacy 18. Ability to secure data after product use / safe disposal 19. Creation of shared values 20. Creation of social capital 21. Strengthening democracy 22. Creating attitudes of sharing	1–5 scale 1 = not at all 2 = rather not 3 = difficult to say 4 = almost yes 5 = fully
B5 – distribution channels	1. We have direct sales 2. We have direct online sales 3. We have our own stores 4. We have partner stores 5. We have wholesale stores run by partners	1–5 scale 1 = not at all 2 = rather not 3 = difficult to say 4 = almost yes 5 = fully
B6 – customer relationships	1. Personal assistance 2. Dedicated personal assistance 3. Self-service 4. Automated service based on personal customer profiles 5. Online user communities 6. Co-creation – involving customers in the product development process	1–5 scale 1 = not at all 2 = rather not 3 = difficult to say 4 = almost yes 5 = fully
B7 – revenues	1. Sales of products and services 2. Usage fee 3. Subscription fee 4. Rental/lease/leasing 5. Licenses 6. Brokerage fee 7. Advertising	1–5 scale 1 = not at all 2 = rather not 3 = difficult to say 4 = almost yes 5 = fully

Source: own study.

Entrepreneurs could choose several categories of main customers as well as several criteria for dividing customers. Therefore, the questions about customers were multiple-choice questions, so the variables B1 – key customer and B3 –

customers' criteria are regressors (0-1). The reference groups are B1_r1 – others segment, B3_r1 – the criterion for dividing customers into retail and wholesale, B4_r1 – key VP is reliability of supply, B5_r1 – channels are direct sales, B6_r1 – personal assistance for customers, B7_r7 – advertising.

In order to verify the formulated hypotheses for each customer-focused element of the BM, two LMs were constructed in which all explanatory variables were considered. So, ten regression equations of the LM were calculated. For each customer-focused element of the BM, the parameters of the LM were estimated, assuming the level of significance of 95%. As a result, two lists of variables were obtained which, from the standpoint of the formulated hypotheses, can explain the behavior of the explained variables.

5.2.1. Model A – SMEs' decision-making process to operate in accordance with SDGs

The results of the estimation of the parameters of model A are shown in Table 3. The table contains all variables that are significant, also those for which the level of significance was 0%. In the last column, the odds ratio was calculated, which is interpreted as the relative chance of an event occurring in a given group compared to a reference group. The calculated odds ratio values are independent from other variables. The variables that significantly influence the decision-making process of SMEs to operate in alignment with SDGs are marked with three *** and are presented in Figure 1.

With an assumed significance level all explanatory variables play a significant role in explaining the dependent variable. Therefore, the obtained results confirmed all sub-hypotheses of H1, stating that all customer-focused elements of the BM are associated with the decision to operate in accordance with the SDGs.

The greatest likelihood of deciding to act in accordance with SGs occurs in a company:

– which segregates customers by sex, or by level of environmental awareness, or by level of involvement in socially important issues, or according to their influence on pro-social policy creation decisions;

– whose key VP proposition is an environmental orientation;

– which conducts direct sales online;

– which maintains customer relationships through dedicated personal assistance or automated service based on personal customer profiles;

– whose main source of revenue is sales of products and services.

5.2.2. Model B – SMEs' decision-making process to use measures of the degree of the SD policy implementation

The results of the estimation of the parameters of model B are shown in Table 4. Also, for this model, the table includes not only the variables that are significant

Table 3. The results of estimation of logit model A

Variable	Coefficient	p-value	Significance level	Odds ratio
B3_r3_sex	1.3921	0.0352	**	4.0232
B3_r7_level of wealth	-0.6181	0.0880	*	0.5390
B3_r8_environmental awareness	1.8035	0.0200	**	6.0707
B3_r10_involvement in socially important issues	1.1127	0.0437	**	3.0427
B3_r11_who value their own time	0.6768	0.0812	*	1.9676
B3_r14_pro-social policy creation	1.7031	0.0332	**	5.4911
B4_r3_availability of products	0.4832	0.0544	*	1.6213
B4_r11_environmental orientation	1.0148	<0.0001	***	2.7587
B5_r2_direct online sales	0.2382	0.0067	***	1.2690
B6_r2_dedicated personal assistance	0.2907	0.0279	**	1.3374
B6_r4_automated service based on profiles	0.4175	0.0015	***	1.5181
B7_r1_sales of products	0.3370	0.0039	***	1.4007
B7_r2_usage fee	0.2080	0.0839	*	1.2313

Note: p – significance level, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: own study

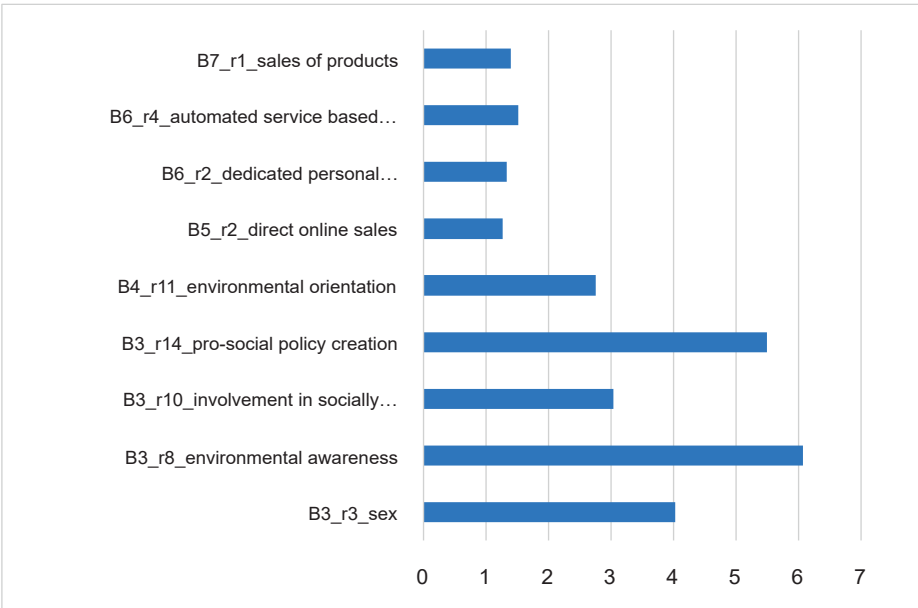

Figure 1. Odds ratio for exogenous variable with significant impact in model A

Source: own study.

but also those for which the level of significance was 90%. The variables that significantly influence the decision-making process of SMEs to use measures of the degree of the SD policy implementation are marked with three *** and are presented in Figure 3.

Table 4. The results of estimation of logit model B

Variable	Coefficient	p-value	Significance level	Odds ratio
B1_r2_manufacturing entrepreneurs	0.7351	0.0084	***	2.0856
B3_r4_education	0.9044	0.0861	*	2.4704
B3_r5_end-user experience	0.9324	0.0188	**	2.5405
B3_r8_environmental awareness	1.2549	0.015	**	3.5076
B3_r10_involvement in socially important issues	1.2852	0.0058	***	3.6155
B4_r2_quality of delivery	0.4710	0.0874	*	1.6016
B4_r4_innovation of offerings	0.4730	0.0898	*	1.6048
B4_r7_convenience/usability	-0.5251	0.0689	*	0.5915
B4_r11_environmental orientation	0.5175	0.0282	**	1.6778
B4_r13_developing innovative technologies	0.4776	0.0556	*	1.6122
B4_r15_stable price	0.5266	0.0507	*	1.6931
B4_r16_access to reliable information	-0.4905	0.0604	*	0.6123
B4_r17_ensuring protection of personal data	-0.4535	0.0762	*	0.6354
B4_r21_strengthening democracy	0.4743	0.042	**	1.6069
B5_r2_direct online sales	0.3030	0.0075	***	1.3539
B5_r5_wholesale stores run by partners	0.4222	0.0072	***	1.5253
B6_r3_self-service	0.3933	0.0016	***	1.4818
B6_r4_automated service based on profiles	0.4859	0.0019	***	1.6256
B6_r6_co-creation involving customers	0.3248	0.0331	**	1.3838
B7_r4_rental/lease/leasing	0.5468	<0.0001	***	1.7276
B7_r5_licenses	0.3233	0.029	**	1.3817
B7_r6_brokerage fee	0.2438	0.0928	*	1.2760

Note: p – significance level, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Source: own study

With an assumed significance level, all explanatory variables play a significant role in explaining the dependent variable. Therefore, the obtained results confirmed all sub-hypotheses of H2, stating that all customer-focused elements of the BM, such as: customer segment, VP, distribution channels, customer relations, and revenue are associated with measures of the degree of SD policy implementation.

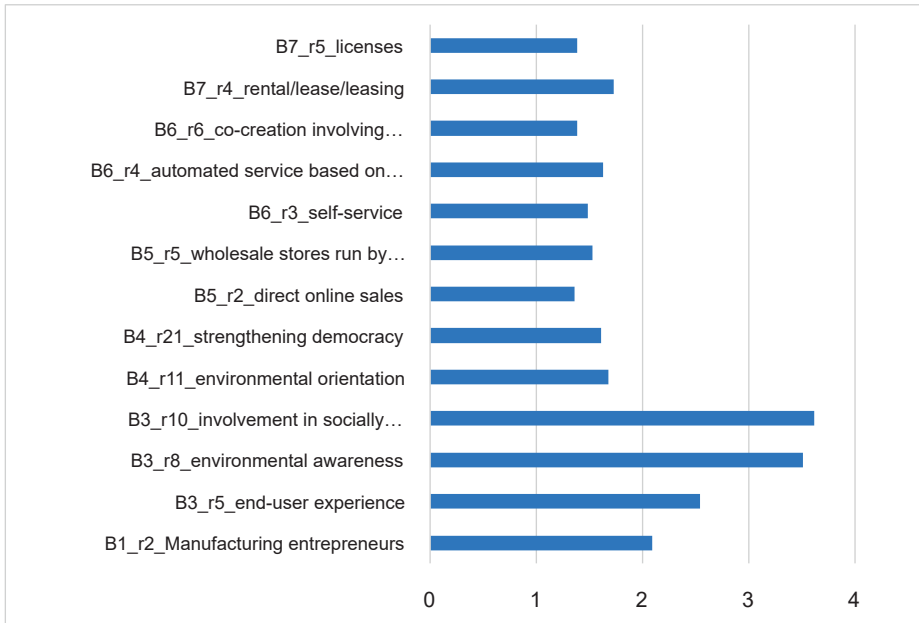

Figure 2. Odds ratio for exogenous variable with significant impact in model B

Source: own study.

The greatest likelihood of deciding to use measures of the degree of the SD policy implementation occurs in SMEs:

– whose main customers are manufacturing entrepreneurs;

– which segregate customers by end-user experience, or by level of environmental awareness, or by level of involvement in socially important issues;

– whose key VP is an environmental orientation or strengthening democracy;

– which conduct direct sales online or their wholesale stores are run by partners;

– which maintain customer relationships through self-service or automated service based on personal customer profiles or involve customers in the product development process;

– whose main source of revenue is rental/lease/leasing or licenses.

6. Conclusion

The existence of a relationship between SGs and measures of the degree of sustainable customer policy implementation defined by variables was examined: customer segment (variable B1 and B3), value proposition (B4), distribution channels (B5), customer relationships (B6), and revenue (B7). 59% of the surveyed SMEs were guided by SGs in their BMs, but only 27% of those surveyed had measures of the

degree of sustainable policy implementation. Both the SDG and measures of the degree of sustainable policy implementation are correlated with most of the items defining the customer perspective established from the BM template – hypotheses H1 and H2. The aforementioned relationships have been verified first with a statistical test and then with the LM. The results of the LM (see Table 3 and 4) showed that all explanatory variables play a significant role in explaining both endogenous variables (the SDG and measures of the degree of sustainable policy implementation). Therefore, there is a relationship between them and the endogenous variables. These results confirmed hypotheses H1 and H2.

6.1. Main conclusions

About 60% of surveyed SMEs attempt to meet the growing demands of customers and the environment in terms of sustainability and apply SGs in their BMs. However, only half of them also apply sustainability metrics, i.e., verify whether the set goals have been met. SMEs focused on customers and their growing environmental awareness (expressed, for example, through sustainable consumption and search for green offerings) apply both sustainability targets and performance measures. Dedicating an offer to customers focused on creating a pro-social policy (concerning solving social problems) or valuing their own and others' time makes it necessary to set SGs. The studied SMEs measure the degree of their SD policy implementation, keeping in mind the experience of the end participants (focus on user experience) as well as the "activist" type customers (people involved in social issues). Building the value of an enterprise's offerings on the wide availability of products/services is conducive to their setting SGs in their BMs. Measuring the extent to which sustainability policies are implemented in a BM is most often done when enterprises offer high-quality products, stable prices, innovation in their offerings (also based on technology development), and value in the form of strengthening democracy (civic activism). The research also showed that direct sales via the Internet is the most conducive channel for setting SDG and metrics in BMs. Sustainability metrics are also required when partner wholesalers need to control such cooperation. Enterprises whose customers expect relationships based on dedicated personal assistance and automated services with personal customer profiles are more likely to use SDG in their BMs. For measures of the degree of SD policy implementation, the analysis showed that enterprises are more likely to apply measures when they build and maintain relationships based on automated services with personal customer profiles, self-service and product co-creation opportunities. The SMEs generating revenue from direct sales and user fees are more likely to formulate SD goals in their BMs. For metrics, licenses, rentals, leases, and brokerage fees are important as revenue sources. In further work, it would be interesting to relate the results obtained to reporting standards of environmental, social, and corporate governance (ESG).

6.2. Limitations of research

Since 59% of respondents indicated that they are implementing the SDG, most of the exogenous variables related to sustainability are strongly related to the endogenous variable. Some of the relationships obtained were easy to predict. Less obvious are the results concerning measures of the degree of SD policy implementation.

References

Battistella, C., Cagnina, M.R., Cicero, L., Preghenella, N. (2018). Sustainable business models of SMEs: Challenges in yacht tourism sector. *Sustainability*, 10(10), 3437. https://doi.org/10.3390/su10103437.

Buffa, F., Franch, M., Rizio, D. (2018). Environmental management practices for sustainable business models in small and medium sized hotel enterprises. *Journal of Cleaner Production*, 194, 656–664. https://doi.org/10.1016/j.jclepro.2018.05.143.

Bocken, N.M., Geradts, T.H. (2020). Barriers and drivers to sustainable business model innovation: Organization design and dynamic capabilities. *Long Range Planning*, 53(4), 917–955. https://doi.org/10.1016/j.lrp.2019.101950.

Cantele, S., Zardini, A. (2020). What drives small and medium enterprises towards sustainability? Role of interactions between pressures, barriers, and benefits. *Corporate Social Responsibility and Environmental Management*, 27(1), 126–136. https://doi.org/10.1002/csr.1778.

Farias, G., Farias, C., Krysa, I., Harmon, J. (2020). Sustainability mindsets for strategic management: Lifting the yoke of the neo-classical economic perspective. *Sustainability*, 12(17), 6977. https://doi.org/10.3390/su12176977.

González-Benito, Ó., González-Benito, J. (2008). Implications of market orientation on the environmental transformation of industrial firms. *Ecological Economics*, 64, 752–762. https://doi.org/10.1016/j.ecolecon.2006.07.012.

Hillary, R. (2004). Environmental management systems and the smaller enterprise. *Journal of Cleaner Production*, 12, 561–569. https://doi.org/10.1016/j.jclepro.2003.08.006.

Jansson, J., Nilsson, J., Modig, F., Hed Vall, G. (2017). Commitment to sustainability in small and medium-sized enterprises: The influence of strategic orientations and management values. *Business Strategy and the Environment*, 26, 69–83. https://doi.org/10.1002/bse.1901.

Joyce, A., Paquin, R.L. (2016). The triple layered business model canvas: A tool to design more sustainable business models. *Journal of Cleaner Production*, 135, 1474–1486. https://doi.org/10.1016/j.jclepro.2016.06.067.

Macchion, L., Toscani, A.C., Vinelli, A. (2023). Sustainable business models of small and medium-sized enterprises and the relationships to be established within the supply chain to support these models. *Corporate Social Responsibility and Environmental Management*, 30(2), 563–573. https://doi.org/10.1016/j.heliyon.2023.e17109.

Muñoz-Torres, M.J., Fernández-Izquierdo, M.A., Rivera-Lirio, J.M., Escrig-Olmedo, E. (2019). Can environmental, social, and governance rating agencies favor business models that promote a more sustainable development? *Corporate Social Responsibility and Environmental Management*, 26(2), 439–452. https://doi.org/10.3390/su11030915.

Oakley, J.L. (2011). Bridging the gap between employees and customers. *Journal of Marketing Management*, 28, 1094–1113. https://doi.org/10.1080/0267257X.2011.617707.

Osterwalder, A., Pigneur, Y., Tucci, C.L. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of the Association for Information Systems*, 16(1), 1–25. https://doi.org/10.17705/1CAIS.01601.

Teece, D.J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319–1350. https://doi.org/10.1002/smj.640.

Wirtz, B., Gottel, V., Daiser, P. (2016). Business model innovation: Development, concept and future research directions. *Journal of Business Models*, 4(1), 1–28. https://doi.org/10.5278/ojs.jbm.v4i1.1621.

Zott, C., Amit, R., Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management*, 37(4), 1019–1042. https://doi.org/10.1177/0149206311406265.