

Original scientific paper

UDC: 658.8:502/504, 658.8:378(497.5)

<https://doi.org/10.18045/zbefri.2024.1.123>

## Exploring the relationship between sustainable marketing and the performance of a higher education institution\*

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### Abstract

*This paper addresses the challenges and opportunities of applying sustainable marketing in higher education institutions (HEI), focusing on the performance of the higher education institution in achieving multiple goals from the perspective of stakeholders. Although the existing academic literature, contains a wide range of research on sustainability, it is mainly focused on the for-profit sector. A lack of research examining sustainable marketing in the public sector, especially in the field of higher education, has been noted. An analysis of the existing scientific literature was carried out and the barriers to wider adoption of sustainable marketing in the academic environment are identified. Quantitative research was conducted to test the proposed conceptual model defined by the multidimensional construct of sustainable marketing and its impact on the success of a higher education institution. The research results showed a positive relationship between sustainable marketing and higher education institution performance. The benefits of implementing sustainable marketing can be seen in creating positive changes that we as a society want to experience, in the rational use of resources, and in creating added value while considering the long-term interests of society and the environment. The research findings can contribute to a better understanding of the*

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\* Received: 07-02-2024; accepted: 25-03-2024

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*role of sustainable marketing in higher education and provide guidelines for its broader application to create a more sustainable and socially responsible academic environment.*

**Keywords:** *sustainable marketing, stakeholders, higher education institutions, performance measurement*

**JEL:** *M31, C51, I23, Q01*

## 1. Introduction

Sustainable marketing challenges the traditional marketing model by prioritizing long-term welfare over short-term gains (Gordon et al., 2011). Knowledge is the most valuable resource and the most important precondition for economic development and the well-being of the entire society. Therefore, the role of HEI is very important because universities are the heart of the social, cultural, intellectual and technological development of the community. Previous empirical research on sustainable marketing orientation, originating in the work of Jamrozy (2007), Bridges and Wilhelm (2008), Belz and Peattie (2009), Wheeler et al. (2003), Hunt (2011), and Sheth et al. (2011) cover different activities and are mostly related to the for-profit sector, while the search for available research on sustainable marketing orientation related to the higher education segment results in small representation. In this segment, one comes across research by the author Abou-Warda (2014), who investigates and confirms the relationship between the sustainable marketing orientation of HEIs in Egypt and their accreditations as a selected measure or indicator of success. The recommendations and suggestions of previous research that indicate the need for empirical validation of the concept of sustainable marketing form the origin and conceptual framework of this paper. Menon and Menon (1997), and Kumar et al. (2013) emphasize the need to develop a measurement instrument for sustainable marketing in terms of strategic orientation and indicate the requirement for quantitative empirical validation of the sustainable marketing construct based on the theoretical frameworks of Jamrozy (2007), Mitchel et al. (2010). There is a lack of involvement of business entities in the non-profit sector, especially in the higher education segment (Abou-Warda, 2014).

To fill the identified research gap, the fundamental objective is to test a conceptual model for measuring the impact of sustainable marketing on HEI performance. Ruiz de Sabando et al. (2018) state that the perceptions of different stakeholders regarding their subjective evaluation of HEI's success in the achievement of set goals can be retained with a more appropriate approach to performance measurement in the context of higher education. Similarly, Harris (2001) explains that for performance evaluation and its connection to marketing orientation, it is necessary to include the perceptions of internal and external

stakeholders. Subjective views of students as direct users are considered relevant to evaluating the service quality, while the attitudes and perceptions of other stakeholders are relevant to evaluating success in achieving the stated goals that are the focus of this research. Therefore, the purpose of this research is to investigate the attitudes and perceptions of key stakeholders towards sustainable marketing in HEI. Accordingly, the research hypothesis was set H1: Sustainable marketing statistically significantly impacts the performance of HEI. To address the identified research gap and achieve the purpose of the study, following the relevant research recommendations, the authors developed a conceptual model aimed at measuring the impact of sustainable marketing on higher education performance to test the proposed hypothesis.

The paper contains the scientific literature review in the area of the research topic, methodology with a proposal of a conceptual model, research findings with a discussion, and a conclusion, stating the limitations of the research.

## **2. Literature review**

The following is a review of the scientific literature in the field of sustainable marketing in HEI, the role of stakeholders in sustainability and performance in the context of higher education.

### **2.1. Sustainable marketing in higher education**

Sustainability in higher education as a concept encompasses the integration of sustainability into teaching, research and community engagement (Lozano et al., 2013). Educational institutions are increasingly recognizing the importance of aligning their marketing strategies with sustainability principles, which can improve institutional reputation. Universities, as centers of knowledge, have the potential to influence social norms and business practices, which gives them a key role in promoting sustainable marketing (Lozano et al., 2015). Concurrently, research on sustainability can generate innovative solutions, while community engagement can facilitate the diffusion of sustainable practices (Fadeeva and Mochizuki, 2010). In terms of current trends, universities worldwide are increasingly embedding sustainability into their strategic plans, curriculum designs, and research agendas (Lozano et al., 2015; Williams, 2021).

Numerous previous studies define sustainable marketing as a multidimensional construct (Jarvis et al., 2003; Jamrozy, 2007; Mitchell et al., 2010; Crittenden et al., 2011; Hunt, 2011; Sheth et al., 2011; Chow and Chen, 2012; Sharma and Kiran, 2013; Abou-Warda, 2014; Mahmoud, 2016; Lučić, 2020; Mukif et al., 2020; Sinčić Čorić et al., 2020). Despite all economic, social, and political obstacles, sustainable

marketing contributes to (1) efficiency (van Dam 2019; 2003; Mitchell et al., 2010), (2) creation and improvement of stakeholder relationships and trust (van Dam and Apeldoorn, 1996), (3) better understanding of the market and community expectations (Andrews, 1998), (4) simultaneous meeting of key stakeholders' needs (Mitchell et al., 2010) and of other interest groups (Belz and Peattie, 2009), (5) encouraging desired mindsets and behaviors (Mahmoud 2016), (6) adopting sustainability values and principles throughout all structures (Slater and Narver, 1995), (7) organizational learning and improvement of adaptability (Mitchell et al., 2010), (8) balancing and improving social, economic, and environmental performance (Chow and Chen, 2012; Sharma and Kiran, 2013; Vollero et al., 2022), and (9) sustainable positive business performance from the perspective of creating economic, environmental, and social contributions (Belz and Peattie, 2009; Mitchell et al., 2010) of HEIs.

Dyllick and Hockerts (2002) explain the implementation of sustainability in business, which is done by applying the principles of triple responsibility: economic, social, and environmental (Jamrozy, 2007; 2009; Richardson, 2018). The application of sustainable marketing can be seen as a prerequisite for a sustainable competitive advantage of a HEI that contributes to sustainable economic development (Hunt, 2011; Nefat, 2015), and society as a whole (Fadeeva and Mochizuki, 2010). By embracing sustainability, universities can enhance their societal relevance, foster innovation, and prepare graduates for the sustainability challenges and opportunities of the 21st century (Lozano et al., 2013). Sustainable marketing in higher education is a business culture that involves continuous dialogue with all stakeholders and represents the only successful simultaneous possibility of balancing the needs, requirements, and expectations of HEIs' stakeholders, environment protection with the long-term interests and goals of the HEI, and of the society as a whole (Richardson, 2018).

## **2.2. Stakeholders in higher education**

Stakeholders in higher education are individuals or groups who have an interest in the activities, outcomes, and overall performance of an educational institution. Each of these stakeholder groups brings a unique perspective to the mission and goals of a HEI. The needs and expectations of these diverse stakeholders often intersect but can also be in conflict. Therefore, engaging with these stakeholders, understanding their perspectives, and aligning their interests toward shared goals becomes an important task for HEIs (Mainardes, Alves, and Raposo, 2012). Understanding and managing these multiple stakeholder relationships is crucial for HEIs' success and sustainability, and is particularly relevant for sustainable marketing, as it aims to create and communicate value for all stakeholders, and to foster mutually beneficial relationships with them (Polonsky, 2011).

HEIs relate to several different stakeholders in their internal and external environments, the number and interrelationships of which are extremely complex. Therefore, HEIs should distinguish between different groups of stakeholders and their importance (Mihanović, 2007; Baturina, 2018). Chahal and Sharma (2006) maintain that socially responsible action is the result of the expectations and concerns of all stakeholders involved, their influence, and pressures. Following Kotler's (2008) reflections on the different importance of each stakeholder group they represent, three main groups of stakeholders are distinguished: (1) unavoidable stakeholders, (2) necessary stakeholders, and (3) desirable stakeholders. In the academic literature, sustainable marketing is considered from the perspective of multiple stakeholders (Wheeler et al., 2003; Maignan et al., 2005; Kirchoff et al., 2011), drawing on Grinstein and Goldman's (2011), and Turan's et al. (2016) stakeholder theory, with Amaral and Magalhaes (2002) highlighting the importance of the role of external stakeholders in the context of HEI management, and Enders (2004) emphasizing the challenges of HEI management considering multiple stakeholders.

Effectively managing these diverse stakeholder relationships is essential for HEIs. It requires a clear understanding of each stakeholder group's interests, expectations, influence, and the ability to communicate effectively with each group. This involves not only providing information but also listening and responding to stakeholder feedback, and engaging stakeholders in meaningful dialogues and collaborations (Freeman et al., 2010; Gordon et al., 2011).

### **2.3. Performance of higher education institutions**

The performance of a HEI is pivotal to achieving its educational, research, and social goals. Performance refers to the efficiency and effectiveness of an institution's operations, including financial management, resource utilization, and service delivery (Marginson, 2013; Wijesundara and Prabodanie, 2022). Performance in the public sector can be defined as the degree to which certain values are realized for users of services and programs of public business entities (Vitezić, 2007). The measurement of public sector performance can be described as an evaluation, assessment or judgment of the impact, results or level of achievement of the set goals based on the activities carried out, which can be quantified by diverse indicators (Vrdoljak Raguž, 2010).

Since the purpose of business entities in the public sector is not simply to make a profit, but is reflected in the level of satisfaction of public needs (Magdinceva Sopova and Stojanovska-Stefanova, 2020), which are sometimes insufficiently defined, Vitezić (2007) explains that measuring the level of achievement of the set goals in this sector is extremely complex, and requires a more heterogeneous group of performance indicators, while profit sector companies focus on only two

main interest groups (shareholders and consumers), and are dominantly followed by financial, quantitative performance indicators (Behn, 2003). Similarly, Duque-Zuluaga and Schneider (2008) note that measuring public sector performance is more complex than measuring the performance of the for-profit sector due to the presence of a larger number of stakeholders and the mismatch in the mission and programs of public sector entities. Harmonizing business outcomes is difficult because success or failure cannot be objectively expressed only by financial indicators. Alfirević et al. (2008) explain that performance of public and non-profit enterprises can be viewed from different aspects due to the fact that different groups of stakeholders are interested in their activities, and they particularly emphasize the importance of the education system for social development.

Pun and White (2005) explain that business performance represents the level of success in achieving the set goals, its measurement is a function of controlling the achievement of the business entity, and in addition to traditional financial indicators, modern systems for measuring business performance include non-financial indicators such as customer and employee satisfaction, service and product quality, social responsibility, and achievement of strategic goals (Mečev and Grubišić, 2020; Nguyen Thi Khanh and Nguyen, 2022). Ruiz de Sabando et al. (2018) find that perceptions of various stakeholders regarding subjective evaluation of achievement of goals set by the HEI, service quality, loyalty, student retention, and word of mouth can be sustained with a more relevant approach to performance measurement in the context of higher education. Achieving superior performances in a HEI requires strategic management, effective governance, and a commitment to continuous improvement. It also requires engagement with stakeholders, as their support and feedback can contribute to the institution's success and its long-term viability.

Despite contextual differences, conceptually similar existing research confirmed a positive relationship between the sustainable marketing and performance of business entities in for-profit sector (Jarvis et al., 2003; Jamrozy, 2007; Mitchell et al., 2010; Hunt, 2011; Crittenden et al., 2011; Sheth et al., 2011; Chow and Chen, 2012; Sharma and Kiran, 2013; Mahmoud, 2016; Lučić, 2020; Sinčić Ćorić et al., 2020; Mukif et al., 2020). Only the research of Abou-Warda (2014) is available to date, confirming the positive relationship between sustainable marketing and accreditations of Egyptian public HEIs.

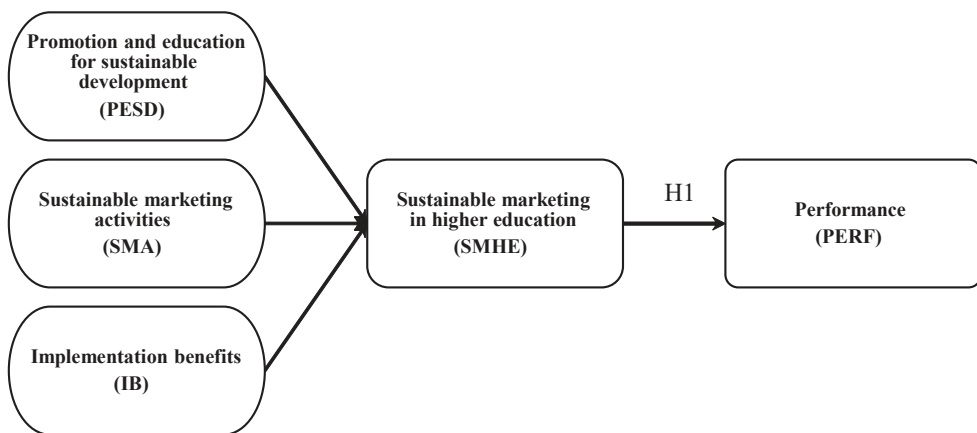
### **3. Methodology**

This part of the paper presents the methodological framework of the empirical research based on a comprehensive literature review and previous relevant research on the relationship between sustainable marketing (i.e. sustainable

marketing orientation as its operationalization) and performance in the context of higher education. As an appropriate approach to assess the performance of a HEI, the subjective assessment of success in achieving the multiple goals of the HEI about its competitors was used as a selected non-financial performance indicator according to Ruiz de Sabando et al. (2018).

To achieve the empirical objectives, exploratory primary research was conducted following the literature review, which is suitable to investigate the attitudes and perceptions of key stakeholders towards sustainable marketing in HEI. In doing so, the authors propose a conceptual model shown in Figure 1. Development of structural and measurement model that follows, consisting of two constructs: (1) Sustainable Marketing in Higher Education (SMHE) as a multidimensional construct and (2) Performance (PERF) as a unidimensional construct, assessed as success in achieving the multiple goals of a HEI.

Figure 1: Conceptual model



Source: Author's construction

The primary quantitative empirical research was conducted using a measurement instrument developed by Meštrović et al. (2021) for SMHE and Meštrović (2022) for PERF. It examines the attitudes and perceptions of key stakeholders in higher education regarding sustainable marketing and the performance of HEI, which is assessed by its success in achieving its multiple goals, both defined on 7-point Likert scales. The research was conducted between May 10 and May 30, 2019, using an anonymous online Google Forms questionnaire on a convenience sample and additionally using a snowball technique to reach a broader range and number of stakeholders in higher education.



Univariate and multivariate statistical analyses were performed using the Statistical Package for Social Sciences program (SPSS 23.0) to analyze and interpret the results and test the proposed hypotheses. The sample was described and systematized using the methods of descriptive statistical analysis, while partial least squares structural equation modeling (PLS-SEM), a multivariate method that combines factor and regression analysis and does not assume normality of the data distribution (Hair et al., 2017), was applied to examine the relationships between the constructs, using SmartPLS 3.3.3.

#### 4. Empirical data and analysis

A total of 380 higher education stakeholders completed the questionnaire. For this study, only responses from stakeholders other than students were considered relevant to assessing the success of the HEI in achieving its multiple goals relative to its competitors. Thus, the sample consisted of 262 females and 118 males who fully completed the questionnaire. The following Table 1 shows a sample of higher education stakeholders other than students by the ownership structure of business entities in which the respondents are employed and by their level of education.

Table 1: Sample – respondents' education level and business entities' ownership structure

Education level	Business entities' ownership structure							
	Public		Mixed		Private		Total	
	N	%	N	%	N	%	N	%
3-years vocational secondary education and training	1	100.0		0.0		0.0	1	0.3
General secondary education or 4- and 5-years vocational secondary education and training	25	73.5		0.0	9	26.5	34	9.0
University or professional undergraduate study	24	70.6		0.0	10	29.4	34	9.0
University or professional graduate study	127	67.9	10	5.3	50	26.7	187	49.3
Postgraduate scientific magistral study	12	66.7		0.0	6	33.3	18	4.7
Doctoral study	100	95.2		0.0	5	4.8	105	27.7
Total	289	76.3	10	2.6	80	21.1	379	100.0

Source: Authors' calculation



According to Hair et al. (2017) and Memon et al. (2020), the sample of 360 respondents is considered adequate, i.e. large enough for the purposes of PLS-SEM analysis.

The results of the descriptive statistical analysis of the Sustainable Marketing in Higher Education (SMHE) construct, as measured by the three dimensions of (1) Sustainable Marketing Activities (SMA), (2) Promotion and Education for Sustainable Development (PESD), and (3) Implementation Benefits (IB) are shown in Table 2 that follows. The IB dimension was rated with the highest mean score ( $\bar{x} = 5.86$ ,  $\sigma = 0.001$ ), the lowest mean score ( $\bar{x} = 5.33$ ,  $\sigma = 0.001$ ) achieved the SMA dimension, while the PESD dimension was graded with the mean score 5.85 ( $\sigma = 1.063$ ). The SMA dimension's highly rated item was SMA4 – Partnership with regional and local government bodies ( $\bar{x} = 5.73$ ,  $\sigma = 1.200$ ), while the item SMA9 – Regularly considering the impacts of own business decisions on various members of stakeholders (employers, students, potential students, parents of students, employees, higher education institutions, scientific institutions, relevant ministry, local and regional government bodies), on natural and financial resources and society at large was rated with the lowest mean score ( $\bar{x} = 4.66$ ,  $\sigma = 1.551$ ). The IB dimension's highly rated item was IB11 – Creating benefits for all stakeholders and wider society ( $\bar{x} = 6.01$ ,  $\sigma = 1.158$ ), and the item IB6 – Increasing study success was rated with the lowest mean score ( $\bar{x} = 5.45$ ,  $\sigma = 1.303$ ). The PESD dimension's highly rated item was PESD6 – Promotion of sustainable development principles through own business practices ( $\bar{x} = 6.03$ ,  $\sigma = 1.195$ ), while the PESD dimension's item with the lowest mean score was PESD3 – Implementation of study programs on sustainable development ( $\bar{x} = 5.64$ ,  $\sigma = 1.314$ ).

Table 2: Descriptive statistical analysis of SMHE construct

Code	Item	Mean	SD
Sustainable marketing activities (SMA)		5.33	0.001
SMA1	Adjusting business processes to laws and legal regulations while striving to achieve own business goals	5.04	1.108
SMA2	Concern about environmental and societal long-term benefits while striving to achieve own business goals	5.24	1.238
SMA3	Dialogue with key stakeholders (employers, students, prospective students, parents of students, employees, higher education institutions, scientific institutions, relevant ministries, local and regional government bodies and society at large)	5.34	1.411
SMA4	Partnership with regional and local government bodies	5.73	1.200
SMA5	Partnership with the local community	5.41	1.291
SMA6	Partnership with economic entities	5.49	1.274
SMA7	Partnership with competitors	5.20	1.369

Code	Item	Mean	SD
SMA8	Concern about all employees while striving to achieve own business goals	5.27	1.242
SMA9	Regularly considering the impacts of own business decisions on various members of stakeholders (employers, students, potential students, parents of students, employees, higher education institutions, scientific institutions, relevant ministry, local and regional government bodies), on natural and financial resources and society at large	4.66	1.551
SMA10	Increasing the application of modern information and communication technology (ICT) in business processes and teaching methods	5.58	1.302
SMA11	Increasing the availability of formal, informal and nonformal education to all stakeholders	4.88	1.523
SMA12	Anticipating and respecting the needs of broader community and future generations	5.51	1.288
SMA13	Transparency and availability of data on own activities taken that contribute to the society at large and on efforts being taken to reduce the negative impact on the environment	5.44	1.264
SMA14	Acceptance, implementation and application of the principles of sustainable development as an essential part of business culture, at all levels and all aspects of business	5.56	1.289
SMA15	Promotion of new ideas that contribute to acceptance and implementation of sustainability as a lifestyle and business philosophy	5.58	1.286
Implementation benefits (IB)		5.86	0.001
IB1	Creating the change, we want to testify as a society at large	5.91	1.165
IB2	Rationalising usage of resources	5.95	1.066
IB3	Creating added value for users while taking into account long-term interests of both society and environment	5.75	1.107
IB4	Adapting existing and/or creating new study programmes	5.79	1.091
IB5	Increasing loyalty and satisfaction of users and other stakeholders	5.83	1.163
IB6	Increasing study success	5.45	1.303
IB7	Increasing the visibility of higher education institution	5.99	1.213
IB8	Intensifying internal and external mobility of students and employees	6.00	1.160
IB9	Increasing ethics and morality, availability and transparency of business, procurement and donation data	5.82	1.219
IB10	Education for sustainable development	5.83	1.190
IB11	Creating benefits for all stakeholders and wider society	6.01	1.158
IB12	Creating and achieving competitive advantage	5.96	1.134
IB13	Simultaneous achievement of environmental, societal and economic goals	5.90	1.148

Code	Item	Mean	SD
Promotion and education for sustainable development (PESD)		5.85	1.063
PESD1	Improving the entire higher education system’s quality	5.98	1.237
PESD2	Improving continuous professional development and training of all employees engaged in the higher education system	5.92	1.297
PESD3	Implementation of study programs on sustainable development	5.64	1.314
PESD4	Implementation of elective courses on sustainable development	5.75	1.318
PESD5	Reporting about own endeavours and achievements in accordance to sustainable development	5.75	1.139
PESD6	Promotion of sustainable development principles through own business practices	6.03	1.195

Note: SD = standard deviation

Source: Authors’ calculation

The results of the descriptive statistical analysis of the Performance (PERF) construct, which is assessed as success in achieving the multiple goals of the HEI are shown in Table 3 that follows.

Table 3: Descriptive statistical analysis of PERF construct

Code	Item	Mean	SD
Performance		4.86	0.989
PERF1	Efficiency of higher education institution’s management	5.02	1.100
PERF3	Continuous employee professional development and training	4.88	1.233
PERF4	Application of ICT in learning and education	4.72	1.350
PERF5	Motivating environment for learning and teaching	4.51	1.276
PERF6	Improving student standards in order to increase fairness. with special care for the social dimension of study	4.74	1.518
PERF7	Intensifying incoming and outgoing mobility of students and employees	4.73	1.455
PERF9	Study programs’ quality	5.15	1.358
PERF10	Adaptation of study programmes that contribute to sustainable development. while taking into account the specifics of the local environment and community	4.74	1.378
PERF11	Enabling access to education for all stakeholders	4.95	1.342
PERF12	Continuous implementation of activities raising the level of entire population’s educational structure	5.02	1.268
PERF13	Students’ competences for future professions. creative and innovative work and development	4.81	1.382
PERF14	Integrating sustainable development principles. values and practices into all aspects of education and business	4.80	1.387

Code	Item	Mean	SD
PERF15	Reporting on own efforts and achievements that are in line with the principles of sustainable development	4.70	1.367
PERF16	Ethics, morality and publicity of actions	4.47	1.430
PERF17	Ability to meet the needs and desires of key stakeholders	4.74	1.180
PERF18	Ensuring the minimum accessibility standards for students with disabilities	4.91	1.252
PERF19	Contributing to the creation of a knowledge society and collective well-being	4.98	1.308
PERF20	Innovations transfer from science into economy and social activities	5.13	1.193

Note: SD = standard deviation

Source: Authors' calculation

As shown in the previous table, the highest scoring item of the PERF construct was PERF9 – Study programs' quality ( $\bar{x} = 5.15$ ,  $\sigma = 1.358$ ), followed by PERF20 – Innovations transfer from science into economy and social activities ( $\bar{x} = 5.13$ ,  $\sigma = 1.193$ ), while items PERF5 – Motivating environment for learning and teaching ( $\bar{x} = 4.51$ ,  $\sigma = 1.276$ ) and PERF16 – Ethics, morality and publicity of actions ( $\bar{x} = 4.47$ ,  $\sigma = 1.430$ ) had the low mean scores.

The reliability of the measurement scales of the constructs was assessed by Cronbach's alpha coefficients and correlations with the associated constructs. The values of the Cronbach's alpha coefficients of the measurement scales ranged from 0.928 to 0.958 (i.e. 0.939 for SMA, 0.958 for IB, 0.928 for PESD and 0.953 for PERF construct), whereas the values of the correlations with the associated constructs were above the threshold of 0.30 (Nunnally, 1967), both confirming the internal consistency. All the scales' items were retained and will be analyzed within the structural and measurement model in the part that follows.

## 5. Results and discussion

The Confirmatory Factor Analysis (CFA) was conducted according to the recommendations of Hair et al. (2017) before creating the structural model. Accordingly, the structural model SMHE-PERF presented in Figure 2, which frames the relationship between SMHE and PERF, was defined by one exogenous higher-order construct SMHE consisting of three lower-order constructs: (1) SMA, (2) PESD and (3) IB, and one endogenous latent construct PERF. SMHE, as the higher-order construct, was defined as a reflective-formative model, type II (Jarvis et al., 2003; Sarstedt et al., 2019).

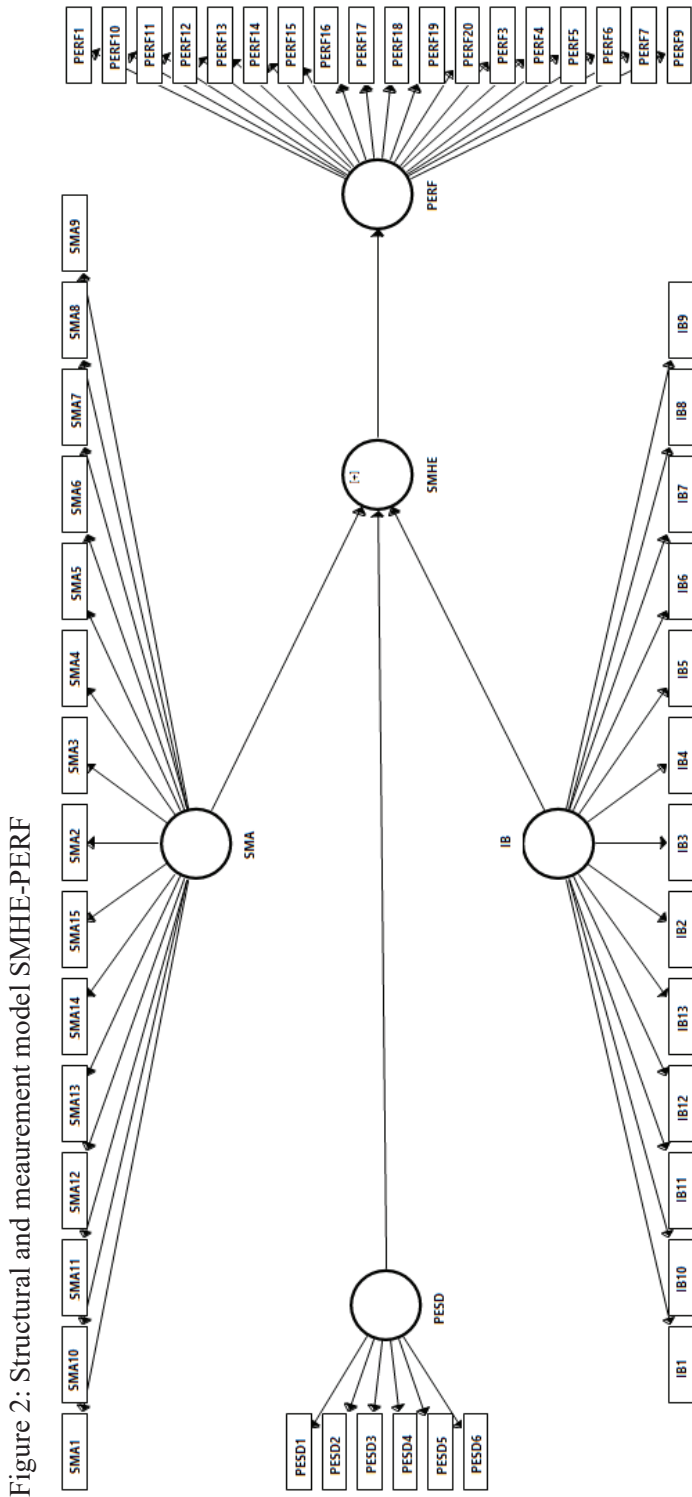


Figure 2: Structural and measurement model SMHIE-PERF

Source: Authors' calculation

The evaluation of the higher-order constructs using the PLS-SEM method was carried out using the two-stage approach recommended by Hair et al. (2020) and Sarstedt et al. (2019), which does not require the same number of indicators of the lower-order constructs (Becker et al., 2012). The first stage involves the evaluation of the lower-order construct of the reflective measurement model, followed by the evaluation of the structural model.

### **5.1. Structural and measurement model evaluation**

The higher-order exogenous construct SMHE (reflective-formative, type II), determined by three lower-order reflective constructs, and endogenous construct PERF determined by reflective variables, were evaluated by the PLS-SEM method using a two-stage approach that does not require an equal number of indicators of lower-order constructs. The weighting path scheme was used, recommended by Hair et al. (2017) as an appropriate approach to examine the relationships in models consisting of higher-order constructs. The *A* setting of the formative construct indicator weighting mode with a maximum number of iterations of 300 and a stop criterion of  $10^{-7}$  was determined according to Becker et al. (2012).

The reflective measurement model analysis and evaluation includes indicators' reliability, internal consistency, and discriminant and convergent validity testing (Hair et al., 2020; Sarstedt et al., 2019). Based on the results of the initial analysis, it was concluded that all indicators of the SMHE-PERF model have standardized factor loadings higher than the threshold of 0.70 (Hair et al., 2019) except SMA1, IB11, and IB12, which were removed. The removal of the SMA10, SMA15, SMA2, SMA4, and PERF18 with standard factor loadings lower than 0.70 did not increase the composite reliability (CR) and the average variance extracted (AVE) values, so it was decided to be kept in further analysis.

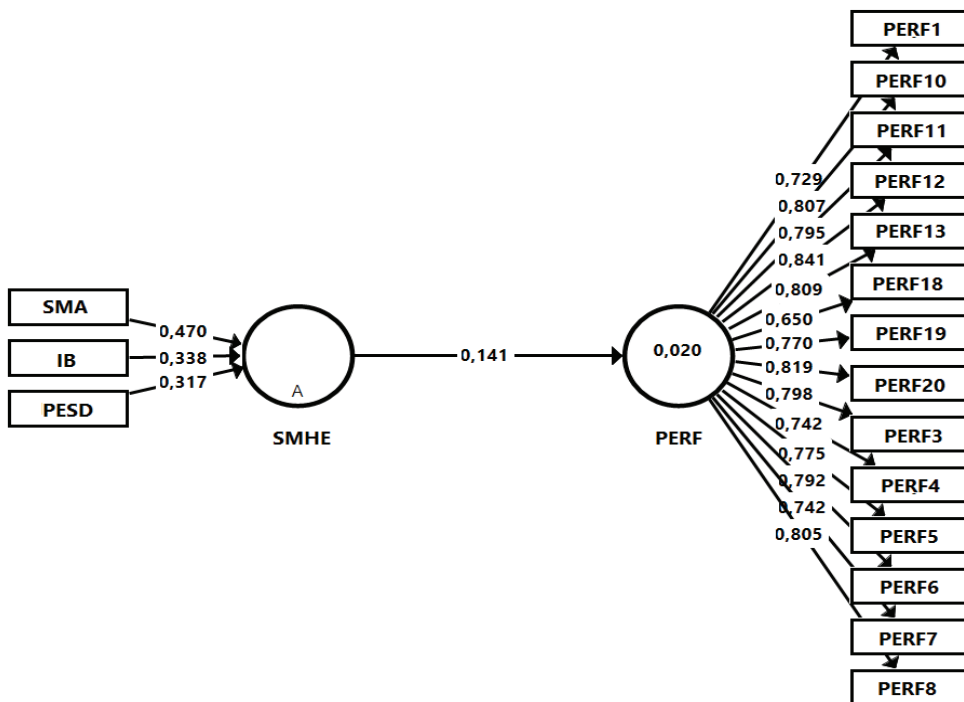
The standardized factor loadings of all variables in the reflective model SMHE-PERF, ranging from 0.623 to 0.876 and Cronbach's alpha coefficients ranging from 0.909 to 0.953, indicate a high level of reliability of latent construct measures. The calculated values of the  $\rho_A$  coefficients ranging from 0.910 to 0.957 indicate a high degree of model's stability and consistency, CR values ranging from 0.932 to 0.958 confirm the reliability of the indicators, and AVE values higher than 0.50 (i.e. ranging from 0.547 to 0.735) confirm internal consistency and convergent validity. The obtained results confirm essential prerequisites for both validity and reliability of all (outer) measurement model constructs (Hair et al., 2019).

Evaluation of the structural (or inner) model involves assessing the relationship between the constructs and the structural model's predictive capability (Hair et al., 2017), namely: (1) estimation of indicator collinearity by checking the variance inflation factors (VIF) of latent constructs; (2) testing the significance and relevance

of structural model relationships by calculating the path coefficients connecting constructs and representing hypothesis relationships using a nonparametric method of resampling; (3) estimation of predictive significance by calculating the coefficient of determination ( $R^2$ ), evaluation of the effect size by calculating the coefficient of influence ( $f^2$ ) and blindfolding-based crossvalidated redundancy measure ( $Q^2$ ); and (4) assessment of the structural model’s quality by calculating the standardized root mean square residual (SRMR).

The collinearity assessment as the first evaluation criterion was performed by checking the VIF values of the latent construct, which for the proposed SMHE-PERF model (Figure 3) was 1.000. Accordingly, it was concluded that there was no collinearity between the latent constructs (Hair et al., 2017).

Figure 3: Structural model SMHE-PERF



Source: Authors’ calculation

The evaluation of the significance and relevance of the structural model relationship between the latent constructs SMHE and PERF was applied by calculating the path coefficient between the constructs that also represent the relationship proposed by hypothesis H1 *Sustainable marketing statistically significantly impacts*



the performance of higher education institutions. The results of the analysis are shown in Table 4 which follows. Since the t-value is higher than 1.96 at the significance level of 5%, the relationship between the constructs SMHE and PERF in the structural model SMHE-PERF is statistically significant and positive, thus confirming the proposed hypothesis.

Table 4: Hypothesis testing – examining the direct relationship in structural model SMHE-PERF

Hypothesis		Original sample $\beta$	t-value	p-value	95% confidence interval	confirmation
H1	SMHE $\rightarrow$ PERF	0.141	6.412	0.000	0.103 – 0.189	+

Source: Authors' calculation

Predictive significance, as the third criterion in the evaluation of the structural model, was assessed by calculating the coefficient of determination ( $R^2$ ), the effect size ( $f^2$ ), and the coefficient of validated redundancy ( $Q^2$ ). The  $R^2$  coefficients of the dependent constructs were calculated using the associated path coefficients and standardized factor loadings of the reflective construct PERF and weighting values for the higher-order formative construct SMHE. Figure 3 shows that the calculated  $R^2$  value for the dependent variable PERF ( $R^2 = 0.020$ ), although weak, is within acceptable limits according to the interpretation of Chin (1998) and Ringle et al. (2015), which means that the SMHE-PERF model explains 2.0% of the variance of the dependent construct PERF. The calculated coefficient of influence ( $f^2$ ) of the SMHE-PERF structural model is 0.020, which can be described as a weak influence of the exogenous latent construct SMHE on the endogenous variable PERF. The value of the Stone-Geisser coefficient of the endogenous construct PERF ( $Q^2 = 0.076$ ) is higher than zero, which confirms the predictive relevance of the SMHE-PERF model.

Finally, the quality of the SMHE-PERF structural model was assessed by calculating the standardized root mean square residual (SRMR). Since the recommended threshold value is lower than 0.08 (Hu and Bentler, 1998, cited in Garson, 2016; Hair et al., 2017), the obtained calculated SRMR value of 0.062 confirmed the quality of the proposed SMHE-PERF structural model.

## 5.2. Discussion

The results show that respondents gave high average scores to perceived success in achieving the multiple goals of HEI and also to the dimensions of SMHE. The conducted CFA confirmed the three-dimensional structure of the SMHE construct yielding acceptable results that determined a framework for the development of the structural model. Both the reliability and validity of the proposed SMHE-PERF

model were confirmed, as well as the significance of the impact of sustainable marketing on the performance of the HEI ( $\beta = 0.141$ ,  $t$ -value = 6.412,  $p = 0.000$ ), confirming the proposed hypothesis.

The results of the CFA confirmed the three-factor structure of the SMHE construct, with satisfactory values of factor structure adequacy. The obtained CFA results indicate that for structural and measurement model development, the SMHE construct should be specified as a multidimensional construct consisting of three dimensions named according to the attributable items and the area they operationalize, and PERF as an unidimensional construct.

Although the results are in line with the only to the date available previous research in the higher education environment of Abou-Warda (2014), who developed sustainable marketing as a multidimensional construct and confirmed its statistically significant positive relationship with the academic accreditation of Egyptian public higher education institutions, no study has assessed its influence on higher education's performance, assessed as success in achieving its multiple goals. In addition to recognizing that each group of stakeholders in higher education has different needs and expectations, and therefore perceives the role and performance of HEIs differently, it is also necessary to highlight the key finding of the empirical research conducted, namely the positive relationship of sustainable marketing with HEIs performance, that is viewed in achieving multiple goals.

The results of the study determined numerous advantages of implementing sustainable marketing in the context of higher education, which is manifested in the creation of positive changes that we want to testify as a society, rational use of resources, creation of added value for users, taking into account the long-term interests of society and the environment, satisfaction of all stakeholders, improvement of the presence of the higher education institution in the media, enhancement of mobility of students and staff, ethics and morality, availability and transparency of business data, achieving a competitive advantage, developing education for sustainable development, and promoting new ideas about sustainability as a philosophy of life, leading to the sustainable development of the entire society.

## **6. Conclusions**

The conducted research has confirmed that sustainable marketing has a positive impact on the performance of HEI. The success of higher education institutions is reflected in the success in achieving its multiple objectives, and the ultimate goal of higher education includes the realization of social, economic, and environmental contributions, which enables the transition to a knowledge society and the creation of the overall well-being of all stakeholders in society. Sustainable marketing, considered an obligation rather than an option in contemporary academic literature,

represents a relatively new and underrepresented paradigm in higher education. The need to shift the marketing strategy to a more *sustainable* one arises as a logical consequence of current circumstances and societal evolution. This implies defining optimal ways of achieving triple goals, bearing in mind that marketing, as a management function and mindset, should contribute to the improvement of management processes and the well-being of society as a whole.

This study contributes to the theory related to sustainable marketing and performance in the context of higher education and with its empirical findings, represents a valuable source for managerial implications. Sustainable marketing has a significant positive impact on the performance of a higher education institution. It can enhance its reputation and capabilities, increase operational efficiency, financial performance, and stakeholder relationships, contribute to environmental and societal goals, and ensure its long-term sustainability.

What is worth mentioning is the fact that the quality of the information from the data collected during the preliminary research is based solely on the perceptions of the heads of institutions and corporate executives, who were the only expert sample involved in the research from which the measurement instruments were derived. This limitation is also reflected in the possible bias of respondents because by evaluating success in achieving goals, it is possible to evaluate them inappropriately and thus present a situation that is different from the actual situation. Future research could focus on obtaining a larger database and broader aspects and factors of sustainable marketing that were not considered in this research. The possibility of respondent bias can be eliminated by research that includes a wider range of higher education stakeholders and by using relevant objective indicators of the success of higher education, and longitudinal research would be preferable. As the data collected is not accessed as taken from representatives of a specific industry, but from individuals (i.e. natural persons), the results obtained should be considered with appropriate attention and consideration. Accordingly, as this research was conducted in the Croatian higher education market, consisting of predominantly public HEIs financed by the government from the state budget, the results of the study should not be generalized as applicable to all the HEIs, since they vary in their main characteristics, i. e. ownership structure, funding means and principles, competition dynamics, location, stakeholders' influence, the scientific scope of study programmes, etc. Despite the aforementioned limitations, the findings of this research contribute to the existing literature with a conceptual and empirical contribution to the field of sustainable marketing in the context of higher education.

**Acknowledgement:** This article is based on the author's (Dunja Meštrović) PhD thesis *Sustainable Marketing in Higher Education* defended in July 2022 at the Faculty of Tourism and Hospitality Management, University of Rijeka. This paper was supported by the Faculty of Tourism and Hospitality Management, project - ZIP-FMTU-025-7-2023.

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## Istraživanje povezanosti održivog marketinga i uspješnosti poslovanja institucija visokog obrazovanja

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### Sažetak

Ovaj se rad bavi izazovima i mogućnostima primjene održivog marketinga na visokim učilištima, fokusirajući se na uspješnost visokoobrazovnih institucija u postizanju višestrukih ciljeva iz perspektive dionika. Iako postojeća akademska literatura sadrži širok spektar istraživanja o održivosti, ona su uglavnom usmjerena na profitni sektor. Uočen je nedostatak istraživanja održivog marketinga u javnom sektoru, posebice u području visokog obrazovanja. Analizirana je postojeća znanstvena literatura i identificirane prepreke široj primjeni održivog marketinga u akademskoj zajednici. Provedeno je kvantitativno istraživanje kako bi se testirao predloženi konceptualni model definiran višedimenzionalnim konstruktom održivog marketinga i njegovim utjecajem na uspješnost poslovanja institucije visokog obrazovanja. Rezultati istraživanja pokazali su pozitivan odnos između održivog marketinga i uspješnosti poslovanja visokog učilišta. Prednosti implementacije održivog marketinga očituju se u stvaranju pozitivnih promjena koje društvo nastoji dostići, u racionalnom korištenju resursa te u stvaranju dodane vrijednosti uz uvažavanje dugoročnih interesa društva i okoliša. Nalazi istraživanja mogu doprinijeti boljem razumijevanju uloge održivog marketinga u visokom obrazovanju i dati smjernice za njegovu širu primjenu u stvaranju održivijeg i društveno odgovornijeg akademskog okruženja.

**Ključne riječi:** održivi marketing, dionici, visoka učilišta, uspješnost, mjerenje

**JEL:** M31, C51, I23, Q01

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