

# Attitudes and perceptions of sustainable marketing in higher education : designing a measurement instrument

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# ATTITUDES AND PERCEPTIONS OF SUSTAINABLE MARKETING IN HIGHER EDUCATION – DESIGNING A MEASUREMENT INSTRUMENT

## ABSTRACT

**Purpose:** The purpose of this paper is to demonstrate the process of designing the measurement instrument that captures attitudes and perceptions of manifest forms of sustainable marketing in higher education in order to gain an insight into the way of how each selected group of higher education stakeholders perceive and understand the concept and the meaning of sustainable marketing.

**Methodology:** In order to gain new knowledge, primary research was conducted on a purposive sampling of experts, where 104 valid and complete answers from selected stakeholders related to higher education were received. Quantitative analysis of the collected data was then applied, using descriptive statistics methods and procedures for determining the instrument's dimensionality, validity and reliability.

**Results:** After the exploratory factor analysis, the multidimensional structure of the proposed measurement instrument of sustainable marketing in higher education was determined, which meets all the given scale validity criteria.

**Conclusion:** This research has formed a valid measurement instrument of sustainable marketing in higher education of statistical and theoretical significance, which can be used for further research, development and validation.

**Keywords:** Sustainable marketing, higher education, measurement instrument, scale development

## 1. Introduction

Sustainability has become a movement that is gaining more and more influence in recent times, so sustainable development became a mandatory paradigm today. The concept of sustainable marketing evolved from the concept of green marketing and the economy of sustainable development. Sustainable marketing implies balancing that includes integrated economic, environmental and social goals.

It is therefore considered as a broad management concept that satisfies multiple stakeholders simultaneously. Higher education institutions (HEIs) have great potential for the development and application of sustainable marketing as a prerequisite for creating and enhancing their competitiveness, while achieving three goals: economic, environmental and social. Sustainable marketing is both a macro and a micro concept whose initial elements

include the analysis of consumer behaviour and current socio-environmental problems in general. The main stakeholders of HEIs are not only students as customers, but also faculties, employers, society, government and the local community. The fundamental role of HEIs is to produce knowledge and innovations and to contribute to the social, economic and environmental challenges (Stephens et al., 2008). By providing the necessary knowledge and incorporating the environmental approach HEIs contribute to the development of stakeholders' capacities and skills for the successful implementation of environmental strategies (Papadas et al., 2017). Regarding the role of higher education, there is still confusion about what exactly sustainable development means, what sustainable development should look like and how to bring a change in organizational culture (Adams et al., 2018; Velazquez et al., 2006).

Since the empirical research on sustainable marketing is limited (Press et al., 2011) and a scarce body of scientific literature focusing on sustainable marketing in higher education sector is published, proposing no applicable measurement scales, this research was applied to fill this gap. There is a need for developing a measurement instrument that captures attitudes and perceptions of manifest forms of sustainable marketing in higher education to examine an insight into how each selected group of higher education stakeholders perceive and understand the concept and the meaning of sustainable marketing. Hence the research problem of this paper is how to properly define a measurement instrument for quantitative research on sustainable marketing in HEIs. It seeks to gain an insight into how members of selected HEI's stakeholder groups view and understand the areas of sustainability and sustainable marketing in higher education.

In order to determine the attitudes and perceptions of key stakeholders on sustainable marketing and its application on HEIs, we started developing and testing a measuring instrument for comprehensive quantitative research that could provide conclusions on the perception and application of sustainable marketing at the University of Rijeka.

This paper is structured as follows: after the introduction, the theoretical and conceptual background discussing sustainability, sustainable marketing and sustainable marketing in HEIs introduces the empirical part of the paper, which describes the process of developing the proposed measurement

instrument, sampling and data collection, and instrument's purification and validation. Lastly, we present the obtained results and finalise with the conclusion pointing out the objectives achieved, the research limitations and suggestions for further research.

## **2. Theoretical and conceptual background**

Researchers have demonstrated an interest in the field of sustainability in higher education (Mitra, 2009; Nicolescu, 2009; Camino & Ayala, 2010; Ma & Todorovic, 2011; Warwick, 2016) and in marketing concepts such as social, economic, environmental and sustainability marketing (Stephens et al., 2008; Abou-Warda, 2014; Shiel et al., 2016; Adams et al., 2018).

### *2.1 Sustainability and sustainable marketing*

Sustainability has been recognized as one of the major issues in marketing strategy (Hoffman, 2002; Annamalai et al., 2018), as well as a key factor of innovation (Edwards, 2005; Dangelico & Vocellelli, 2017), and a relevant topic affecting organizational market performance and stakeholders' involvement (Reilly & Hynan, 2014). Bridges and Wilhelm (2008) defined sustainable marketing as a holistic, integrative approach that involves economic, social and environmental aspects when developing marketing strategies. Thus, sustainability encompasses marketing approaches: economic (Camino, 2007; Closs et al., 2011; Leal Filho et al., 2019), social (Link, 2007), environmental (Bacow & Moomaw, 2007; Hawken et al., 2000; Thompson & Creighton, 2007; Chard et al., 2013; Annamalai et al., 2018), and sustainability marketing (Nidumolu et al., 2009; Chabowski et al., 2011; Abou-Warda, 2014). Some authors argue that companies must have the ability to take the necessary actions to create new ways of producing goods and services that will provide a higher quality of life by minimizing both the use of natural resources and their environmental impact (Almeida, 2002; Montenegro de Lima et al., 2020).

Marketing is focused on meeting consumer's desires and needs (Soares et al., 2019), it represents a social activity, an organizational role and a process for creating, communicating, and adding value to stakeholders for the benefit of all (Keefe, 2004; Kuo & Smith, 2018). Some studies point to the lack of dialog with stakeholders and their inclusion in decision-making processes and emphasise the necessity

to develop and establish an integrative approach (Lozano et al., 2013; Leal Filho et al., 2019) to overcome this gap. Thus, there is a need to act integrative when considering the strategic dimensions of sustainability (Disterheft et al., 2013; Berchin et al., 2017). Marketing actions are also needed for the internal organization which is essential for the successful implementation of marketing activities (Sarquis et al., 2020).

## **2.2 Sustainable marketing in Higher Education Institutions (HEIs)**

Universities worldwide face a major challenge in responding to rapid changes in the market environment (Ma & Todorovic, 2011; Aleixo et al., 2018). These changes have pressured HEIs to adopt market-oriented initiatives (Mitra, 2009). Looking back at the not-so-distant past, many HEIs considered sustainability as an unnecessary additional cost (Hawken et al., 2000; Hoffman & Henn, 2008), but nowadays, HEIs show strong support and commitment to sustainability that has been implemented in their ethical and responsible mission, goals and other activities (Guerra et al., 2018; Lima et al., 2020). In order to achieve sustainability goals, HEIs need to define strategic actions to achieve sustainability and a measurement framework for institutional success during the implementation process (Casarejos et al., 2017; Finnveden et al., 2020). HEIs' managers need to explore and develop a range of sustainable strategies to provide knowledge that can help address contemporary sustainability challenges and raise environmental awareness (Thomashow, 2014). It is interesting to note that legislative requirements are consolidated when HEIs get involved in the issue of environmental sustainability and when they support legal norms and raise community awareness (Grubba et al., 2017). Some authors recommend that HEIs should be more actively involved in the dialogue with internal and external stakeholders, regarding the institutional sustainability achievement (Soares et al., 2019), and environmental responsibility expectations (Zahid et al., 2018). The commitment of HEIs to sustainable development can be shown through their participation and engagement in social progress around the world. HEIs present themselves as leading authorities in building a world aimed at this goal (Fuchs et al., 2020).

HEIs should be a key actor in promoting sustainable development, having the opportunity to educate

the future leaders and actively participate in facing a number of challenges (Xiong et al., 2013; Beynaghi et al., 2016). The products specifically related to HEIs are their educational services, research projects, courses, and other programs (Sarquis et al., 2020). HEIs can have a great impact on promoting sustainability by paying special attention to encouraging students to adopt sustainable practices and to become more environmentally concerned and friendly (Steiner & Posch 2005; Merkel & Litten 2007; Beynaghi et al., 2016). It also has a direct impact on local communities since HEIs are responsible for the creation and flow of scientific knowledge and other important information (Sachs, 2008; Fuchs et al., 2020). Investing in research and education to contribute to the development of a better educated society is one of the main objectives of HEIs (Gholami et al., 2015; Yuan et al., 2013; Guerra et al., 2018).

## **3. Methodology**

This section of the paper describes the process of designing the "Sustainable marketing in higher education" (SMHE) measurement instrument, which was supposed to be developed to capture the attitudes and perceptions of HEIs' stakeholders' towards manifest forms of sustainable marketing in higher education.

### **3.1 Developing the SMHE measurement instrument**

Consistent with Bearden's and Netemeyer's (1999) considerations for marketing research measurement instrument creation, development and evaluation, the root framework for items aggregation was established by constructs' theoretical outlines and descriptions, as an imperative to adequately capture their theoretical domains. The initial set of items that was generated by adapting existing and creating new items based on prior theoretical and empirical research subject to sustainable higher education, education for sustainable development, and sustainable marketing (Abou-Warda, 2014; Ajzen, 1991, 2002; American Management Association, 2007; Ferdous, 2010; Gaebel et al., 2018; Hillman & Keim, 2001; Jamrozy, 2007; Jaworski & Kohli, 1996; Little, 2006; Mrnjaus, 2008; Rončević & Rafajac, 2012; Rončević et al., 2008; Sidiropoulos & Sibley, 2013; Siu Noel & Wilson, 1999; Stern et al., 1995; United Nations' General Assembly, 2015), was pre-checked by five marketing academics following the suggestions for scale development pro-

cedures (Lewis et al., 2005; DeVellis, 2003; Gerbing & Anderson, 1988) to confirm the initial pool of items implicate all essential and relevant components subject to sustainable marketing in higher education, thus confirming the measurement instrument's content validity. Subsequently, a convenient sample of 20 students was engaged for pilot testing and items refinement according to Hill (1998) and Bearden & Netemeyer (1999) to check the items' adequacy and for measurement instrument's improvement and purification.

Following the precursory section with demographic variables, the questionnaire administered respondents' attitudes towards higher education activities contributing to sustainable development, personal beliefs, attitudes and norms towards sustainable marketing in higher education and the potential benefits of its implementation. Respondents were asked to express the level of their accordance with the proposed 48 items administering the subjects' research interest, by selecting corresponding offered values on the Likert-type scale, ranging from 1 (completely disagree) to 7 (completely agree).

### 3.2 Sampling and data collection

Given the lack of precedent research with respect to sustainable marketing in higher education, in order to obtain new insights, primary research was conducted on a purposive sampling of experts according to the recommendation of Kumar et al. (2013). During the last three weeks of April 2019, data was collected using an anonymous, structured self-administered online questionnaire using Google Docs Forms, distributed by e-mail to the total number of 225 stakeholders (university employees, students, local government and other private and public business entities).

After two reminders, a total of 118 responses were collected, 14 unusable or incomplete ones were excluded, so that the response rate was 46.22% and the analyses were conducted on the responses of 104 questionnaires. From the total number, 64.42% (67) were female respondents whose mean age was 42 years and 37 (35.58%) were male, whose mean age was 44 years. 22 respondents (21.15%) have the highest level of university education i.e. university postgraduate doctoral or postgraduate specialist degree or equivalent, more than half of the total number of respondents (63 or 60.58%) have a university degree equivalent to a master's degree or

equivalent and 19 (18.27%) have a lower level of education (i.e. bachelor's degree or high school).

Since there is no consensus on the sample size adequacy for factor analyses, authors' recommendations range from 50 (de Winter et al., 2009) for statistically significant results for a small number of factors with high factor loadings, up to 500 respondents (Comerey & Lee, 1992, as cited in MacCallum et al., 1996). According to Hair et al. (2010), who recommend a minimum adequate sample size of 100, it was concluded that this condition has been met.

### 3.3 Measurement instrument purification and validation

The main objective of this stage of the measurement instrument development process was to refine the initial pool of items and to divert them according to the content review in order to create a valid measurement instrument of sustainable marketing in higher education to be used for further research. Consequently, 48 questionnaire items measured on a 7-point Likert-type scale, with codes ranging from SM2 to SM49 were included in the further analysis as theoretically and conceptually determined and suitable to the subject of the authors' research focus. The proposed instrument's psychometric characteristics were thus evaluated and its internal consistency and scale reliability were analysed.

To examine the construct validity and reduce the initial number of items and to test the underlying dimensions of the construct, using Statistical Package for Social Sciences (SPSS 23.0), the Exploratory Factor Analysis (EFA) using Principal Components Analysis (PCA) with Varimax rotation was conducted as the most suitable since there was no intercorrelation found among the items (Hair et al., 2010). EFA was applied as a convenient method according to Mejovšek (2013) to classify the manifest variables of the construct, aiming to determine its fundamental factors since the factor structure was not already known from previous studies.

The EFA involved initial reliability tests using item communalities with a cutting point value of 0.5 and Kaiser-Meyer-Olkin Measure (KMO) greater than 0.6 to test the suitability of the data for structure detection (Hair et al., 2010). The results of the EFA demonstrate a high KMO value of 0.794 with Bartlett's Test of Sphericity statistically significant ( $\chi^2=7189.40$  at  $p<0.01$ ), indicating the suitability of the data for

structure detection, since they were not unrelated. The Cronbach's alpha value for the initial 48-item measurement instrument was 0.822, which is above the recommended minimum of 0.7 (Hair et al., 2010), demonstrating good reliability ( DeVellis, 2003).

In the process of EFA authors indicated 25% of items as unreliable, since having communalities

extracted (CE) values below the acceptable value of 0.4, factor loadings below 0.5, factor loadings above 0.3 on more than one factor and loading the “wrong” factor (Hair et al., 2010), i.e. items SM2, SM6, SM7, SM9, SM12, SM13, SM14, SM15, SM36, SM37, SM40 and SM41. Accordingly, the final 36-item SMHE measurement instrument was found to be convenient for further study.

**Table 1 Exploratory factor analysis of SMHE measurement instrument**

Communalities		Rotated Factor Matrix <sup>a</sup>			
Item	Initial	Item	1	2	3
SM3	<b>0.669</b>	SM3	<b>0.589</b>	0.026	-0.098
SM4	<b>0.762</b>	SM4	<b>0.681</b>	0.011	0.117
SM5	<b>0.792</b>	SM5	<b>0.625</b>	0.212	0.264
SM8	<b>0.506</b>	SM8	<b>0.518</b>	0.120	0.290
SM10	<b>0.862</b>	SM10	<b>0.571</b>	0.231	0.141
SM11	<b>0.793</b>	SM11	<b>0.547</b>	0.194	0.248
SM16	<b>0.830</b>	SM16	0.122	<b>0.606</b>	0.234
SM17	<b>0.891</b>	SM17	-0.216	<b>0.718</b>	0.132
SM18	<b>0.784</b>	SM18	0.191	<b>0.727</b>	0.111
SM19	<b>0.749</b>	SM19	-0.015	<b>0.624</b>	0.269
SM20	<b>0.878</b>	SM20	0.051	<b>0.784</b>	0.184
SM21	<b>0.910</b>	SM21	0.122	<b>0.796</b>	0.298
SM22	<b>0.836</b>	SM22	0.232	<b>0.740</b>	0.125
SM23	<b>0.844</b>	SM23	0.154	<b>0.741</b>	0.256
SM24	<b>0.886</b>	SM24	0.139	<b>0.784</b>	0.168
SM25	<b>0.906</b>	SM25	0.231	<b>0.761</b>	0.215
SM26	<b>0.934</b>	SM26	0.145	<b>0.730</b>	0.272
SM27	<b>0.889</b>	SM27	0.236	<b>0.710</b>	0.123
SM28	<b>0.899</b>	SM28	0.136	<b>0.726</b>	0.226
SM29	<b>0.880</b>	SM29	0.243	<b>0.721</b>	0.144
SM30	<b>0.844</b>	SM30	0.141	<b>0.681</b>	0.232
SM31	<b>0.941</b>	SM31	0.247	0.154	<b>0.693</b>
SM32	<b>0.944</b>	SM32	0.104	0.128	<b>0.736</b>
SM33	<b>0.872</b>	SM33	0.241	0.145	<b>0.715</b>
SM34	<b>0.792</b>	SM34	0.154	0.041	<b>0.696</b>
SM35	<b>0.913</b>	SM35	0.261	0.150	<b>0.817</b>
SM38	<b>0.816</b>	SM38	0.236	-0.065	<b>0.591</b>
SM39	<b>0.912</b>	SM39	0.134	0.021	<b>0.788</b>
SM42	<b>0.943</b>	SM42	0.245	0.103	<b>0.747</b>
SM43	<b>0.940</b>	SM43	0.125	0.189	<b>0.737</b>
SM44	<b>0.943</b>	SM44	0.293	0.241	<b>0.815</b>
SM45	<b>0.861</b>	SM45	0.271	0.229	<b>0.823</b>
SM46	<b>0.919</b>	SM46	0.293	0.201	<b>0.823</b>
SM47	<b>0.891</b>	SM47	0.222	0.135	<b>0.773</b>
SM48	<b>0.885</b>	SM48	0.235	0.186	<b>0.738</b>
SM49	<b>0.836</b>	SM49	0.295	0.249	<b>0.645</b>

Source: Authors' calculations

Following analyses of 36-items data suitability demonstrate a high KMO value of 0.897 with the Bartlett’s Test of Sphericity statistically significant ( $\chi^2=4403.61$  at  $p<0.01$ ). Although the results demonstrate the instrument at a nascent stage, the three-factor statistically and theoretically acceptable solution was generated after 8 iterations, with Eigenvalues greater than 1 and the total variance explained of 65.35%

(with factor 1 loading 37.23% variance explained, factor 2 19.17% and factor 3 explaining 8.93% of total variance). A high total scale’s Cronbach’s alpha of 0.894, with subscale values ranging from 0.796 to 0.979 which are acceptable for further analysis (Hair et al., 2010), demonstrate the reliability and content validity of the proposed SMHE measurement instrument, as shown in Table 2.

Table 2 SMHE measurement instrument’s reliability analysis

Item	Construct/Measure	Cronbach’s alpha	Cronbach’s alpha if item deleted	Item-to-total correlation
<b>Promotion and education for sustainable development (PESD)</b>		<b>0.859</b>		
SM3	Improving the entire higher education system’s quality		0.856	0.541
SM4	Improving continuous professional development and training of all employees engaged in the higher education system		0.847	0.546
SM5	Implementation of mutual elective courses on sustainable development		0.834	0.645
SM8	Implementation of study programs on sustainable development		0.856	0.751
SM10	Promotion of sustainable development principles through own business practices		0.835	0.868
SM11	Reporting about own endeavours and achievements in accordance to sustainable development		0.838	0.680
<b>Sustainable marketing activities (SMA)</b>		<b>0.979</b>		
SM16	Promotion of new ideas that contribute to acceptance and implementation of sustainability as a lifestyle and business philosophy		0.978	0.773
SM17	Concern about environmental and societal long-term benefits while striving to achieve own business goals		0.961	0.600
SM18	Partnership with regional and local government bodies		0.906	0.502
SM19	Partnership with competitors		0.979	0.630
SM20	Partnership with economic entities		0.977	0.599
SM21	Partnership with the local community		0.978	0.709
SM22	Adjusting business processes to laws and legal regulations while striving to achieve own business goals		0.863	0.644
SM23	Concern about all employees while striving to achieve own business goals		0.797	0.645
SM24	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)		0.844	0.763
SM25	Anticipating and respecting the needs of broader community and future generations		0.792	0.704

Item	Construct/Measure	Cronbach's alpha	Cronbach's alpha if item deleted	Item-to-total correlation
SM26	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		0.856	0.625
SM27	Increasing the application of modern information and communication technology (ICT) in business processes and teaching methods		0.725	0.794
SM28	Increasing the availability of formal, informal and non-formal education to all stakeholders		0.888	0.774
SM29	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		0.978	0.853
SM30	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		0.978	0.720
<b>Implementation benefits (IB)</b>		<b>0.796</b>		
SM31	Rationalising usage of resources		0.791	0.778
SM32	Increasing efficiency		0.744	0.790
SM33	Creating added value for users while taking into account long-term interests of both society and environment		0.719	0.788
SM34	Creating and achieving competitive advantage		0.754	0.800
SM35	Improving business performance		0.739	0.815
SM38	Increasing study success		0.795	0.755
SM39	Increasing the visibility of higher education institution		0.794	0.743
SM42	Intensifying internal and external mobility of students and employees		0.701	0.742
SM43	Simultaneous achievement of environmental, societal and economic goals		0.764	0.774
SM44	Promoting new ideas about sustainability as a new paradigm and as a lifestyle that leads to sustainable development of entire society		0.753	0.736
SM45	Creating the change we want to testify as a society at large		0.725	0.654
SM46	Increasing ethics and morality, availability and transparency of business, procurement and donation data		0.709	0.750
SM47	Education for sustainable development		0.720	0.758
SM48	Increasing loyalty and satisfaction of users and other stakeholders		0.765	0.676
SM49	Adapting existing and/or creating new study programmes		0.790	0.661

Source: Authors' calculations



#### **4. Results**

The EFA of the statistically significant and theoretically convenient set of 36 items determined three factors of the SMHE construct, named according to the attributable items and the area of interest they operationalise. Since all factors have more than 3 attributable items needed to give it a meaningful interpretation (Henson & Roberts, 2006), the authors named them at this stage of the inductive, theoretical, and subjective process (Pett et al., 2003) as follows.

The first factor generated which included 6 items considering the topic of educational and encouraging activities contributing to sustainable development was named “Promotion and education for sustainable development – PESD” (Cronbach’s Alpha 0.859). The second factor containing 15 items capturing manifest forms of sustainable marketing activities and practices in higher education was named “Sustainable marketing activities – SMA” (Cronbach’s Alpha 0.979) and lastly, the third factor determined by 15 items that accessed personal beliefs, attitudes and norms about potential advantages, contributions and benefits of sustainable marketing practices in higher education was named “Implementation benefits – IB” (Cronbach’s Alpha 0.796).

#### **5. Conclusion**

The aim of this paper was to design a measurement instrument that captures attitudes and perceptions

of manifest forms towards sustainable marketing in higher education in order to gain insight into higher education stakeholders’ understanding and perceptions of the concept and meaning of sustainable marketing. The measurement instrument’s content validity, dimensionality and reliability was confirmed and after the exploratory factor analysis, the multidimensional structure of the proposed measurement instrument of sustainable marketing in higher education was determined. The resulting three-dimensional scale encompasses promotion and education for sustainable development, sustainable marketing activities and implementation benefits, which meets all the given scale validity criteria. Due to the lack of prior research studies on sustainable marketing in higher education that outlined the fundamental purpose of this exploratory research, the results obtained could not be accordingly compared but can serve as a starting point for further studies in the same scope of the research topic. While this research has formed a valid measurement instrument of sustainable marketing in higher education of statistical and theoretical significance, the authors, aware of its limitations that may have impacted the results and conclusions, suggest the proposed measurement instrument to be employed to a larger sample size that includes a wider range of population profiles for further research, measurement instrument’s improvement, development and validation.

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