Contribution of Service-Learning and Supporting Factors to the Environmental Sustainability Commitment of Higher Education Institutions

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This study analyzes how service-learning contributes to the level of commitment to environmental sustainability in higher education institutions (HEIs), as perceived by their students. The empirical analysis has been conducted by using the PLS-SEM modelling, on a sample of 366 undergraduate students of business from Croatia and Bosnia & Herzegovina. The obtained results support the hypothesized influence of the service-learning development level on the sustainability commitment in higher education. We also consider the indirect effects within the model. They show that service-learning mediates the relationships between students' idealism and sustainability commitment, as well as between students' social trust and sustainability commitment. Implications of obtained empirical results for theory and higher education practice are discussed. The potential for generalizing results for other sustainability interventions is assessed.

Key words: environmental sustainability commitment, higher education, service-learning, moral philosophy, social trust.

INTRODUCTION

In this paper we seek to understand how service-learning (SL) teaching and learning practices, along with the supporting factors which include relevant students' ethical and social characteristics, contribute to the environmental sustainability (ES) commitment in higher education institutions (HEIs).

We adopt the definition of service-learning, based on Felten & Clayton's (2011) generic elements, emphasizing structuring of an academic course in terms of a voluntary service provided to the community, involv-

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ing co-operation with the civil society partners, as well as personal reflection, required to provide meaningful learning. The choice of SL, among many competing sustainability interventions, is based on its potential to connect students to their social environment, via individual experience, as well as provide relevant generalizations of individual emotions and interpretations, once those are reflected upon (Ash & Clayton, 2009).

Literature on the contribution of SL to the ES commitment of an academic institution is scarce, since the extant body of knowledge focuses either on individual effects, such as promoting sustainable consumption (Barth et al, 2014), or takes a wider view, looking at the SL effects in specific professional fields (Jones et al, 2014), or in less-developed geographical regions (Bodorkós & Pataki, 2009). It is still unclear how a SL initiative contributes to the environmental commitment of a HEI, viewed in terms of a systemic institutional transformation, involving both greening the physical operations, as well as providing relevant, sustainability-related teaching and learning (Wright, 2002; Beringer & Adomßent, 2008). In addition, we seek to understand the individual ethical factors, contributing to students' personal transformation, as well as social factors, contributing to the success of the relationship of a HEI and partnering community organizations.

Those supporting factors are viewed from the perspective of students (Kagawa, 2007). Based on previous research of individual ethical characteristics, and their influence to pro-environmental attitudes and behavior (Zaikauskaite et al., 2020), we choose to study students' moral idealism and relativism as representative individual ethical factors. On the other hand, social trust proves to be the cornerstone of bridging and bonding social relationships, enabling individuals, organizations and communities to create normative expectations and shared presumptions (Sydow, 2006), which serve as a starting point for building service-learning partnerships. Since interpersonal trust can be further generalized into the (systemic) trust to social institutions (Putnam, 2000), we chose to analyze students' trust into the well-known key actors from their social environment, as a proxy of complex social determinants, related to the success of service-learning partnerships.

Our results, based on a sample of 366 undergraduate students of two regional business schools located in South East Europe, show that service-learning can be empirically linked to the level of a HEI's environmental sustainability commitment. In addition, service-learning development mediates the indirect relationship between students' idealism and social trust to key social actors, and a HEI's environmental sustainability commitment, which confirms their role as supporting factors to service-learning, in the context of sustainability teaching and learning.

THEORETICAL BACKGROUND

Transformative Teaching and Learning of Environmental Sustainability in Higher Education Institutions

In order to achieve environmental sustainability, HEIs need to be actively involved and collaborate with organizations from other sectors, or even position themselves as moral leaders in the implementation of sustainability-related social change (cf. Wright, 2002; Stephens et al., 2008; Zilahy et al., 2009). In this process, stakeholder partnerships are so valuable that the role of academic institutions and their partners is referred to in terms of co-creating the social transformation (Trencher et al., 2013).

The dominant topic in the existing literature is related to learning and teaching for sustainability, including learners' and teachers' transformation journeys. They entail transformation from the traditional, data and subject-oriented teaching, toward co-operation and knowledge sharing, including the construction of new social realities, as to change the underlying presumptions, related to economic development and its relationship to the environment (Moore, 2005). Studies from this literature stream are often based on individual and organizational educational experiences, arising from the bottom-up processes (Shawe et al., 2019), including discussions of personal competencies for transformative teaching (Barth et al., 2007; Wals, 2010). Sometimes, sustainability teaching experiences from a single course (Erdogan & Tuncer, 2009; Sherman and Burns, 2015), or an academic program (Hesselbarth & Schaltegger, 2014) are analyzed. Unfortunately, this literature does not address the functioning of entire HEIs and higher education systems. It also has some inherent limitations, as Corcoran et al. (2004) find that reliance on case studies and descriptive methods could limit the generalizability of the empirical findings, related to HEI sustainability.

This is why it is important to carefully choose a representative intervention tool, among many different ones (see, e.g. Table 2 in Christie et al., 2013), to be used in the transformation of academic teaching and learning, directed toward a higher level of HEI ES commitment (as perceived by students). Our choice is based on several criteria, including the need to encourage students' critical thinking and experiential learning, as well as ensure co-operation with external HEI stakeholders. Those criteria were identified by Hicks Peterson (2009) as the general characteristics of engaged scholarship, leading to holistic social change and, thus, providing a higher level of generalizability of the empirical research on HEI sustainability interventions.

In addition, the intervention tool/approach needs to enable the sustainability initiative participants to reflect on its environment and use the extant sustainability knowledge. This requirement is in line with the findings of Zeyen et al. (2016), who analyze the multi-stakeholder processes, setting the voluntary Corporate Social Responsibility (CSR) standards. Although the CSR standards should be setting the norms of future organizational behavior, they are, in reality, influenced by the present characteristics and behavior of the stakeholders involved. In an analogy, as a HEI sustainability initiative seeks to change its socio-economic environment, it is, simultaneously, shaped by the same environment and its stakeholders (Srivastava et al., 2019).

Service-learning adequately addresses the described requirements, as it can be viewed as an intervention tool, including both the stakeholder involvement and reflection of learning, through volunteering in the community or social organizations. Its popularity is based on the promise to rise above the mere awareness of ethical problems (Kolenko et al., 1996) and achieve tangible learning outcomes (Yorio & Ye, 2012). When used for teaching sustainability, SL places individual learning into community and social contexts and enables students to achieve personal transformations. The personal transformation path could be taking the route of developing sustainable consumption patterns (Barth et al., 2014), achieving a caring relationship toward the environment (Shephard, 2008), and/or inspiring civic participation and collaboration with relevant sustainability actors (Bringle & Hatcher, 2000). The observed effects of service-learning, such as the development of civic skills (Caspersz & Olaru, 2015) and overall student satis-

faction (Gomez Estern et al., 2019), are generalizable across different educational levels and types of community/social service involved (Conway et al., 2009). This provides robust empirical results across different sorts of empirical studies.

In addition to being a path to individual transformation, service-learning is a meaningful approach to academic teaching and learning, as individual experiences are structured into relevant learning events (Jacoby, 1999), once students return to the academic settings from their community/social service. As the individual transformative experiences are followed by the stages of reflection and generalization in an academic setting, opportunities are created for creating and disseminating new knowledge on sustainable development.

Students' Moral Philosophies and Social Trust as Generic Supporting Factors of Academic Teaching and Learning Transformation

A research design based on experiential learning needs to account for a range of student attitudes, which could be relevant for their personal transformation(s). Those attitudes have rarely been used in existing studies (Swaim et al., 2014). At another hand, the complexity of individual sustainability-related attitudes, as well as institutional (social) realities, involving the functioning of a school, hosting the sustainability initiative and its social relationships with multiple external stakeholders, need to be acknowledged, as well.

Moral Philosophy and Environmental Sustainability

In the proposed model, individual characteristics of students, participating in a sustainability initiative, are addressed by their moral philosophy and the dichotomy of its fundamental dimensions, related to moral idealism and relativism (Forsyth, 1992).

In the context of personal moral philosophies, the idealistic moral ideology is focused on choosing the actions which will not harm others. It is based on the notion that it is almost always possible to find a morally acceptable course of action, leading to the desired outcomes. Such a universalistic approach is rejected by moral relativists. They believe that the contextual factors and the stakeholders of the decision-making process have the decisive influence in choosing the appropriate moral behavior (Forsyth & Nye, 1990). A recent study, conducted by Zaikauskaite et al. (2020), empirically tested the capacity of moral idealism and relativism concepts to predict social and environmental attitudes and behaviors, by using the well-documented Ethics Position Questionnaire (EPQ) (Forsyth, 1980). They found significant relationships between moral idealism and both social and environmental attitudes and behaviors. Moral idealism has been found to serve as a significant predictor of both environmental attitudes and behaviors. On the other hand, moral relativism was found to significantly predict environmental attitudes only when its interactions with idealism were considered. It did not prove to significantly drive the pro-environmental behaviors in this study. These recent empirical results confirm the usefulness of both the moral philosophy construct, as well as the EPQ instrument, for the empirical research of ES.

Other recent empirical research (Hong & Kang 2019) confirms the existence of causal relationships among moral philosophy and pro-environmental behaviors, as mediated by additional constructs. In this study, the authors empirically confirm that idealism drives moral intensity, which further influences the pro-environmental consumer behavior of Korean online apparel shoppers.

There are additional examples of similar approaches in the extant sustainability literature, such as Karpiak & Baril (2008), linking students' cognitive moral reasoning to the concern for the environment, and Thomas (2005), looking at the students' moral reasoning, as contributing to the legitimacy of the sustainability concept.

However, the links between ethics and the complex ES issues might not be obvious, as demonstrated by Markowitz & Shariff (2012) for the case of climate change. Their research shows that the human moral judgment system has multiple limitations in recognizing the moral imperatives of addressing sustainability issues. Thus, individuals are limited in their moral reasoning to the sustainability issues and might rely on social ideologies (such as liberalism/conservativism) in their pro-environmental decision-making, as shown by Feinberg & Willer (2013). Therefore, there are multiple conceptual reasons for the inclusion of social factors into this study. Those include (a) potential reliance of students on social ideologies and (re)interpreting the existing characteristics of their HEIs, when assessing the ES issues; (b) interconnectedness of environmental and social issues, such as inequality, the threat of violence, etc., which requires a holistic approach to meeting the needs of human well-being (Rogers et al., 2012), often labeled in terms of social sustainability (Magis & Shinn, 2008) and (c) addressing the co-operative aspect of HEI sustainability initiatives and the dynamics of the mutual stakeholder relationships within ES interventions.

Social Trust and Environmental Sustainability

The social aspect of the ES in higher education needs to be explored at two levels: the 'micro' one, related to individual HEI initiatives, and the 'macro' one, which arises from the notion of ES as a systemic change project that needs to approach the social and environmental issues holistically.

At the 'micro' level, there is a clear need for stakeholder co-operation and sharing of social norms, promoted by social trust (Selman, 2001). Its role has been conceptualized in the modern moral philosophy in terms of enabling co-operation among individuals and groups, characterized by inequalities of power, status, and capacity (Baier, 1986). At the group or the organizational level, the existence of trust among members of an organization, or partners within a project/initiative, mitigates the risk, inherent to all sorts of collective efforts (Lahno, 2017).

In inter-organizational cooperation, the development of interpersonal trust leads to the collective trust toward partnering companies/organizations, which lowers the transaction costs and enhances the mutual performance, as the social interaction among partners evolves (Zaheer et al., 1998). This initial analysis of the role of trust in inter-organizational relationships received plentiful support from subsequent literature (McEvily & Zaheer, 2006), which proves to apply to ES initiatives (Evangelinos & Jones, 2009), in which HEIs and other social actors strive to achieve transformational change (Cortese, 2003).

Social trust has implications at the 'macro' (social) level, as it reflects how both individual and organizational actors accept the given normative expectations related to social institutions, as well as form those expectations, by learning about institutions and their reliability. Therefore, trust in the social institutions and the system makes it possible to develop and take for granted some shared expectations, which make it possible for individuals

and groups to work together, regardless of the prior experiences (Sydow, 2006). Thus, trust can be considered a sort of public good (Gille et al., 2016), which is compatible with the social capital view, advocating for the central role of general social trust in economic development (Fukuyama, 1995). The same argument can be extended to the concepts of sustainable development and/or environmental sustainability, since social trust can be used to explain the synergetic relationship between social and environmental sustainability (Lehtonen, 2004).

HYPOTHESES DEVELOPMENT

Being an experiential method of teaching and learning, service-learning is inextricably linked to students' moral judgment, which develops through interactions among their psychological characteristics and notable social experiences (Hersh et al., 1979). Furthermore, Piaget's (Lickona, 1976) and Kohlberg's notions of the universal stages of moral development (Kohlberg & Hersh, 1977), ensure the generalizability of our approach, as applicable to university students, who have already reached the stage of adulthood (Gibbs, 1979). In addition, we have already discussed the results of the previous research on the relationship between moral philosophy and pro-environmental attitudes and behaviors. Therefore, it is hypothesized:

H1. The level of service-learning development directly and positively influences the ES commitment of HEIs (as measured by the student perception).

The development of students' moral judgment is possible only if HEIs can influence the level of moral idealism, provided that the previous research shows the links between idealism and pro-environmental attitudes/behaviors, which do not seem to be present for the case of moral relativism (Zaikauskaite et al., 2020). Such reasoning is, additionally, supported by the discussion of the place and role of ethics and social responsibility in business education (Smith & Rönnegard, 2016), presupposing that relevant students' attitudes and the resulting behavior can be influenced, or even transformed, by higher education. Therefore, we hypothesize:

H2. Students' idealism directly and positively affects the perceived environmental sustainability commitment of HEIs.

H3. Students' relativism has no significant effects on the perceived environmental sustainability commitment of HEIs.

H4. The level of service-learning development positively mediates the relationship between students' idealism and the perceived environmental sustainability commitment of HEIs.

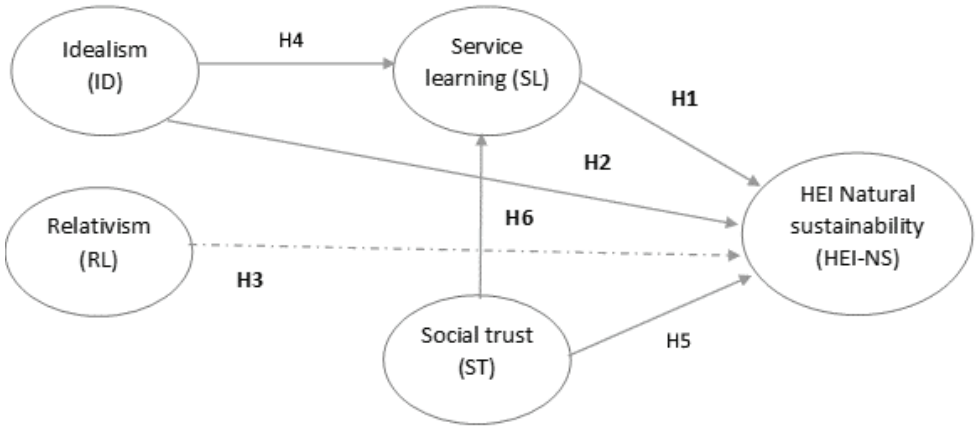
As discussed previously, social trust can be considered as directly contributing to the ES commitment of HEIs, by using its 'macro' dimension, which contributes to a social environment that is favorable for all sorts of academic ES initiatives. The 'micro' dynamics of the social trust and ES relationship are hypothesized to function by promoting stakeholder co-operation in co-operative ES interventions, such as service-learning. Therefore, we hypothesize:

H5. Students' trust in social actors directly and positively affects the perceived environmental sustainability of HEIs.

H6. The level of service-learning development positively mediates the relationship between students' social trust and the perceived environmental sustainability of HEIs.

The resulting research model is illustrated in Figure 1.

Figure 1
Conceptual research model



Source: Authors.

METHODS

We use a sample of undergraduate students from two public mid-sized business schools in South-East Europe, at the University of Split (Croatia) and the University of Banja Luka (Bosnia and Herzegovina). A sample of 500 students (distributed among the two schools, according to the relative size of the student population), was randomly selected from the list of all students, enrolled in our undergraduate courses, by using Microsoft Excel. They were informed about the purpose of the research and invited to fill in the anonymous, self-administered electronic survey. We have received 366 usable responses, which leads to an overall participation rate of 73.2%. The number of responses (115 respondents from Banja Luka and 251 from Split) is representative of the relative size of the student populations of both schools.

The research instrument consists of four parts, with the following constructs and measures:

(a) As already described, students' *moral philosophy* was measured by using the EPQ questionnaire. Items, related to *idealism*, included three statements on the need to avoid psychological and/or physical harm to other people (ideal1-ideal3) and one statement on the need to strive toward moral perfection (ideal4). *Relativism* was measured by four items, stating the individualistic nature of interpreting ethics and moral standards (relativ1-relativ2), as well as complexity and contingencies of interpreting ethical considerations (relativ3-relativ4). All items were reproduced from Forsyth (1980, 178) and translated into the local language.

(b) *Social trust* has been operationalized in terms of trust toward key actors from the social environment (corporate executives, educational, judicial, and medical professionals, labeled as soc_tr1 – soc_tr4). Namely, Torpe & Holle (2011) demonstrated potential cross-cultural and cross-national issues, when using a single survey item to measure the generalized social trust, based on asking if a respondent trusts "most people", or the "majority of people" in their society. This is why we decided to operationalize social trust indi-

rectly, based on the respondents' trust in social groups whose position is associated with a high level of implicit trust in social institutions. Therefore, the formulation of questionnaire items asked the respondents to rate the moral behavior and their trust into the political class, small business owners, corporate managers and educational, medical and judicial staff in their country (society).

(c) *The level of the service-learning development* was described by one item, outlining the general orientation of an HEI (serv_le3), toward the experiential and collaborative learning and three items, specifying service-learning co-operations with external actors, active in the fields of environmental (serv_le2), social (serv_le4) and economic sustainability (serv_le1) – taking stock of the triple bottom line, as suggested by Elkington (2013). This item has asked respondents to rate the level in which their HEI involves them into academic learning, by using and facilitating the active involvement in volunteering and community service, as well as co-operation with civil society.

(d) Four items, relevant for the evaluation of an *HEI's perceived commitment to environmental sustainability* (labeled as nat_sus1 – nat_sus4), were formulated based on dimensions, initially proposed by Clugston & Calder (1999). The formulations of those four items in the questionnaire included: (a) statements of sustainability commitment in HEI's documents, including sustainability topics in curricula and learning objectives; (b) personal exposure to sustainability topics in classes during studies; (c) assessment of how a HEI performs 'greening' of its physical operations and (d) promotion of sustainability principles on campus, by using special events, guest lectures, round-table discussions, etc.

All items were measured on a nine-level Likert scale, as recommended by Preston & Colman (2000). The scale consists of four levels of disagreement, a neutral point and four levels of agreement with predetermined statements, describing the research items.

Partial least squares structural equation modeling (PLS-SEM) is the preferred quantitative approach for our empirical strategy, as to initially identify that the relevant relationships are justified (Henseler et al., 2009; Henseler et al., 2012) and relevant, since quantitative modeling of this topic has been done only rarely (e.g. Sahin et al., 2012; Swaim et al., 2014).

The SmartPLS software package, version 3.2.9, has been used for empirical analysis (Ringle et al., 2015). After data cleansing and erasing the observations with a straight-line responding pattern, the final sample size of 366 respondents is obtained, which is regarded as acceptable (Bagozzi & Yi, 2012; Chin et al., 2003; Chin, 2010) for performing the PLS-SEM analysis. Results of statistic power analysis are performed in the G*Power software package, version 3.1.9.2. With the maximum number of endogenous construct predictors equal to four, the minimum required sample size is 55 observations, to detect R^2 values of at least 0.25 (with a 5% error probability). Departure from the data normality assumption is not considered to be an issue, since PLS-SEM is robust enough (Barclay et al., 1995).

EMPIRICAL FINDINGS

Reflective Measurement Model Evaluation

All latent constructs in the proposed research model are of the reflective type. Therefore, the assessment of the measurement model quality includes the examination of indicators' factor loadings, internal consistency, convergent, and discriminant

validity. Retained indicators with factor loadings, Cronbach's α and composite reliability (ρ_C) values, and HTMT values are presented in Table 1.

Table 1
Internal consistency, convergent validity, and discriminant validity of constructs

Panel a: Convergent validity and reliability									
Idealism (ID)		**Relativism (RL)**		**Social trust (ST)**		**Service-learning (SL)**		**Higher education institution environmental sustainability (HEI-ES perception)**	
Cronbach's α									
0.725		0.707		0.723		0.827		0.719	
Composite reliability (ρc)									
0.806		0.811		0.819		0.885		0.823	
AVE									
0.51		0.522		0.5345		0.660		0.541	
Remaining items with loading values									
ideal1	0.715	relat1	0.700	soc_tr1	0.622	serv_le1	0.829	nat_sus1	0.723
ideal2	0.716	relat2	0.722	soc_tr2	0.852	serv_le2	0.818	nat_sus2	0.811
ideal3	0.679	relat3	0.848	soc_tr3	0.686	serv_le3	0.742	nat_sus3	0.609
ideal4	0.745	relat4	0.598	soc_tr4	0.746	serv_le4	0.855	nat_sus4	0.784
Panel b: Discriminant validity - HTMT criterion									
		ID		RL		SL		HEI-ES perception	
RL		0.152		-		-		0.113	
SL		0.167		0.095		-		0.749	
ST		0.096		0.169		0.218		0.214	
HEI-ES perception		0.195		-		-		-	

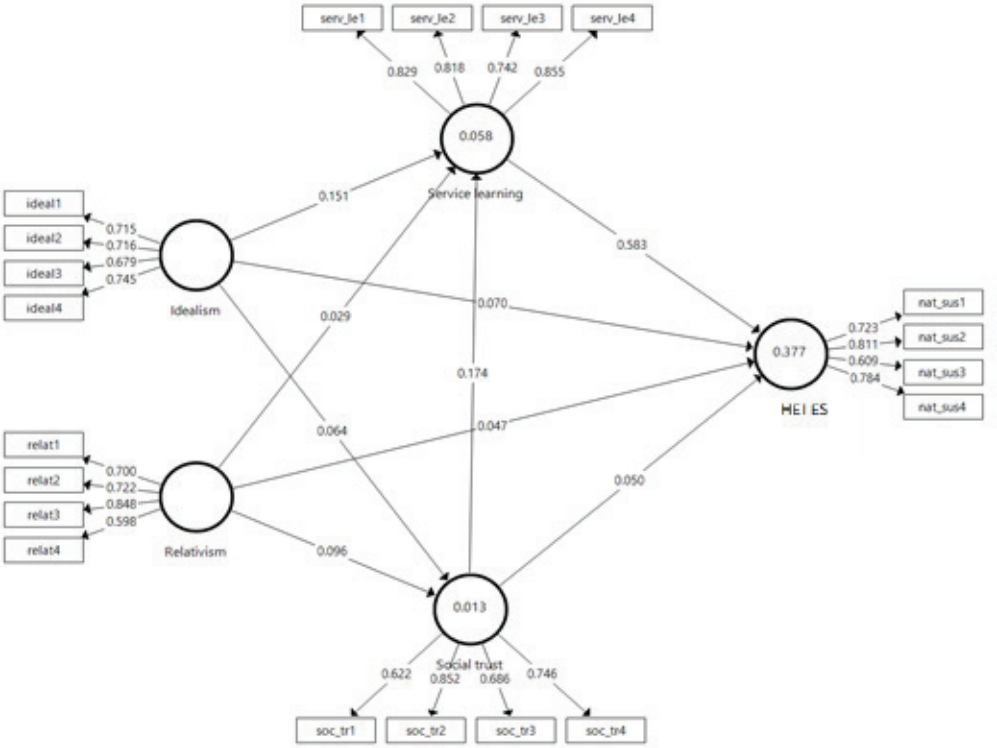
Source: Authors' calculation.

Constructs' indicators with factor loadings above 0.4 are retained (Hair et al., 2017; Hulland, 1999), while simultaneously observing acceptable values of indicators of constructs' convergent validity. The next step includes the examination of internal consistency reliability, using indicators, such as Cronbach's α and composite reliability (ρ_C) (Jöreskog, 1971; Churchill, 1979). Cronbach's α and composite reliability (ρ_C) are in the range from 0.707 to 0.827, and from 0.806 to 0.885, respectively. Their values are in the acceptable range (from 0.7 to 0.95), to establish internal consistency (Hair et al., 2017). The values of average variance extracted (AVE), as the indicator of constructs' convergent validity, is above the threshold of 0.5 for all constructs. The final step in the evaluation of the measurement model includes the assessment of constructs' discriminant validity using the Heterotrait-Monotrait (HTMT) criterion (Hair et al., 2017). All constructs have HTMT values below the conservative HTMT threshold of 0.85 (Kline, 2011), which indicates the absence of discriminant validity problems.

Structural Model Evaluation and Hypotheses Testing

The obtained structural model (see Figure 2) has been checked for collinearity issues, as the variance inflation indicators (VIF) had acceptable values - between 1.001 and 1.061, i.e. below the threshold of 3 (Hair et al., 2018).

Figure 2
Direct effects and predictive relevance of the structural model



Source: Authors.

Direct effects and coefficient of determination of endogenous constructs in the structural model are further presented in Table 2. The target endogenous construct of HEI environmental sustainability perception has the R^2 value of 0.377, which can be considered as satisfactory predictive accuracy, compared to these values in similar research, using SEM as the empirical strategy (Sahin et al., 2012). Other endogenous constructs in the model, such as social trust and service-learning, have R^2 values of 0.013 and 0.058, respectively. Along with the strength of direct and total effects in the model, results of the bootstrapping procedure level are presented in Table 2.

Table 2
Direct and total effects, bootstrapping confidence intervals, and model's predictive accuracy

Panel c_1: Direct effects and their significance at 5% and 10% level						
	Direct effects	**p values**	**BCa confidence intervals**			
			95%		90%	
			2.5%	97.5%	5%	95%
ID -> HEI-ES perception	0.070	0.084	-0.020	0.140	-0.004	0.134
ID -> SL	0.151	0.007*	-0.027	0.235	0.019	0.217
ID -> ST	0.064	0.365	-0.121	0.173	-0.084	0.160
RL -> HEI-ES perception	0.047	0.454	-0.091	0.159	-0.067	0.141
RL -> SL	0.029	0.741	-0.187	0.162	-0.162	0.137
RL -> ST	0.096	0.355	-0.214	0.221	-0.169	0.199
SL -> HEI-ES perception	0.583	0.000**	0.491	0.656	0.507	0.646
ST -> HEI-ES perception	0.050	0.373	-0.071	0.152	-0.050	0.134
ST -> SL	0.174	0.002**	0.040	0.264	0.068	0.249
Panel c_2: Total effects and their significance at 5% and 10% level						
	Total effects	**p values**	**BCa confidence intervals**			
			95%		**90%**	
			2.5%	97.5%	5%	95%
ID -> HEI-ES perception	0.168	0.001**	0.027	0.246	0.068	0.235
ID -> SL	0.162	0.004*	-0.013	0.249	0.033	0.230
ID -> ST	0.064	0.365	-0.121	0.173	-0.084	0.160
RL -> HEI-ES perception	0.079	0.331	-0.155	0.191	-0.122	0.168
RL -> SL	0.046	0.590	-0.193	0.164	-0.163	0.141
RL -> ST	0.096	0.355	-0.214	0.221	-0.169	0.199
SL -> HEI-ES perception	0.583	0.000**	0.491	0.656	0.507	0.646
ST -> HEI-ES perception	0.152	0.015**	0.000	0.255	0.031	0.234
ST -> SL	0.174	0.002**	0.040	0.264	0.068	0.249
Panel d: Predictive accuracy						
	Endogenous constructs					
	ST		**SL**		**HEI-ES perception**	
R^2	0.013		0.058		0.377	
adj. R^2	0.007		0.049		0.369	

Note: Significance assessment of effects (p-values) is determined using the biased corrected and accelerated (BCa) (two-tailed) confidence intervals derived from the bootstrapping procedure with 5,000 samples, two-tailed test, no sign change - **p<0,05; *p<0,10
Source: Authors' calculation.

Bootstrapping procedures for 5% and 10% significance levels are performed, bias-corrected and accelerated (BCa), with bootstrapping confidence intervals reported and used for effects' significance assessment (Aguirre-Urreta & Rönkkö, 2018). At the significance level of 5%, service-learning has the strongest direct effect on HEI sustainability perception (0.583). Thus, H1 is supported. Social trust has a significant direct effect on service learning (0.174). Additionally, at the significance level of

10%, idealism has a significant direct effect on service-learning (0.151). Besides the direct effects of predictors on the final endogenous construct, indirect effects are also present. Since service-learning also has a mediating role in the model, it is important to observe the strength and significance of the total effects. Idealism has a significant total effect on HEI sustainability perception (0.168) through service-learning as a mediator. Thus, H4 is supported. Social trust has a significant total effect on HEI sustainability perception (0.152), exclusively through the service-learning mediator at a significance level of 5%, which supports H6. Additionally, at a significance level of 10%, idealism has a stronger, total effect (0.162) on service-learning, while social trust is present in the model. Other reported direct and total effects are insignificant, regardless of the significance level. Therefore, H3 is supported, while H2 and H5 are rejected. BCa confidence intervals substantiate that the above-mentioned direct and total effects are significant at the 5% (10%) probability of error. The results of the hypotheses testing are shown in Table 3.

Table 3
Hypotheses testing

Hypothesis	Results
H1. The level of service-learning development directly and positively influences the environmental sustainability of HEIs (as measured by the student perception).	√
H2. Students' idealism directly and positively affects the perceived environmental sustainability of HEIs.	X
H3. Students' relativism has no significant effects on the perceived environmental sustainability of HEIs.	√
H4. The level of service-learning development positively mediates the relationship between students' idealism and the perceived environmental sustainability of HEIs.	√
H5. Students' trust in social actors directly and positively affects the perceived environmental sustainability of HEIs.	X
H6. The level of service-learning development positively mediates the relationship between students' social trust and the perceived environmental sustainability of HEIs.	√

Note: √ supported; X not supported
Source: Authors.

DISCUSSION AND CONCLUSION

At the institutional level, service-learning (SL), being one of the most popular tools of academic teaching and learning transformation, was found to significantly influence HEI ES commitment perception. This study provides empirical evidence for the existence of a direct relationship between these constructs (as hypothesized by H1), and it demonstrates that SL mediates the influences of students' ethical position and social attitudes, to the HEI ES perception (as hypothesized by H4 and H6). Those include students' moral idealism and trust in social actors. As their direct relationships to HEI ES perception could not be inferred from our empirical results, hypotheses H2 and H5 are not supported. Students' moral relativism has been confirmed as irrelevant for sustainability initiatives, as initially suggested by hypothesis H3, as well as recent empirical literature (Zaikauskaite et al., 2020). The empirical findings of this study should be placed in a wider social context. This is especially important for the positioning of service-learning as a social intervention approach/tool, as it seems

to provide an environment in which students' idealism and social trust seem to be developed, and which seems to affect their pro-environmental attitudes. It would be important to find out if the same applies to students' pro-social attitudes and how the service-learning experiences are directing the students' subsequent pro-environmental and pro-social behaviors.

There is a range of interesting implications, coming out of the empirical results obtained in this study. Firstly, the extant literature does not position the SL practice clearly in the context of achieving students' personal transformation(s), as required to achieve the comprehensive social change toward environmental sustainability. Our hypothesis H1 empirically links the SL to the ES commitment of HEIs (as perceived by students), justifying its choice as a representative tool in the transformative change of academic teaching and learning. Idealism, viewed as moral philosophy, and the social trust to key social actors, contribute to the development of the service-learning and, indirectly, to the perceived environmental sustainability of HEIs, which confirms their role as supporting factors to service-learning. However, future research needs to verify their role, in the context of other experiential approaches to academic teaching and learning of environmental sustainability.

From the viewpoint of practical implications, this study affirms the choice of collaborative and experiential approaches, such as service-learning, as teaching and learning tools for environmental sustainability. Our findings are consistent with the previous empirical studies on the role of service learning in the development of civic skills in HE. Our results fit well with the reported contribution of service-learning to multiple relevant business and citizenship skills (Easterling & Rudell, 1997), as perceived by students (Phelps & Dostilio, 2008), but also by a range of other stakeholders (Rutti et al., 2016).

However, one needs to consider the cultural characteristics of the region, in which the study has been conducted. While community service and/or service-learning are a common requirement in Anglo-Saxon countries (with amounts from 61% to 69% of all students being cited as exposed to SL), this figure for Croatian students, in comparative international research, proved to be as low as 5.9% (Haski Leventhal et al., 2010). While this could be associated with the negative legacy of the socialist past, which is also being reflected in other forms of civic participation and social trust (Mikelić Preradović & Mažeikienė, 2019), it also points out to the need for developing a supportive institutional environment for the voluntary introduction of service-learning to the academic community.

Results of this study are considered to be generalizable across different intervention tools/approaches to achieve the transformation of academic teaching and learning toward a higher level of environmental sustainability and contribute to sustainable development. A range of experiential teaching and learning approaches could 'fit the bill', as long as there is a personal transformation imperative involved, both for students and instructors, followed by partnerships with HEIs' stakeholders, to institutionalize the personal experiences. This is an imperative in the South East European region, characterized by the low capacity for planning of sustainable development efforts (Milutinović & Jolović, 2010), as well as a high level of obstacles in developing the green economy (Licastro & Sergi, 2021).

However, the study has some limitations to be considered when interpreting its findings. The complex structure of the questionnaire and the way students independently answered the questions could

lead to a potential misunderstanding of research concepts. Future research should be improved by introducing the mixed-mode study design, which would explore students' experience outside the academic settings, as they get involved in the process of experiential education. In addition, further research would benefit from additional data collection in several countries, with different values/cultures, to address the potential cultural bias, potentially arising from the data collection being performed in only two countries of the South East European region. Nevertheless, we hope that the findings of this study will be useful for HEI administrators wishing to achieve a higher impact in environmental sustainability, or transfer the best practices from the environmental sustainability field to other relevant dimensions of responsible academic education.

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Sažetak

DOPRINOS DRUŠTVENO KORISNOG UČENJA I PODRŽAVAJUĆIH ČIMBENIKA POSVEĆENOSTI VISOKIH UČILIŠTA ZA POSTIZANJE EKOLOŠKE ODRŽIVOSTI

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U ovom se radu, na temelju studentskih percepcija, analizira doprinos društveno korisnog učenja razini posvećenosti institucija visokog obrazovanja u postizanju ekološke održivosti. Empirijska analiza je provedena korištenjem PLS-SEM modeliranja, na uzorku od 366 studenata preddiplomskog studija poslovne ekonomije iz Hrvatske i Bosne i Hercegovine. Dobiveni rezultati podržavaju pretpostavljeno djelovanje razine razvijenosti društveno korisnog učenja na posvećenost ekološkoj održivosti u visokom obrazovanju. U radu razmatramo i indirektne efekte unutar modela. Pritom se pokazuje da je društveno korisno učenje medijator odnosa između studentskog idealizma i posvećenosti ekološkoj održivosti, kao i odnosa društvenog povjerenja i posvećenosti održivosti. Raspravlja se o implikacijama dobivenih empirijskih rezultata za teoriju i praksu visokog obrazovanja. Procjenjuje se i potencijal za generalizaciju rezultata za niz drugih intervencija, usmjerenih na ostvarivanje ekološke održivosti.

Ključne riječi: posvećenost ekološkoj održivosti, visoko obrazovanje, društveno korisno učenje, moralna filozofija, društveno povjerenje.