

Empowering Future Changemakers: How Social Entrepreneurship Education Shapes Student's Social Entrepreneurial Intentions and sustainable Behaviors



Ahmad Din ^a Muhammad Ziaullah ^b Rafia Yasmin ^c

Abstract: *Despite the extensive body of literature on entrepreneurship education and its strong influence on entrepreneurial intentions, relatively few studies have examined its impact on university students' sustainable behavior. In particular, limited attention has been paid to the role of social entrepreneurship education (SEE) in fostering sustainable behaviors among higher education students. Grounded in the Theory of Planned Behavior (TPB), this study investigates the mediating role of social entrepreneurial intention (SEI) and the moderating roles of value-based leadership (VBL) and civic engagement (CE) in the relationship between SEE and sustainable behavior (SB). Using survey data from 340 university students in south Punjab, Pakistan, the findings demonstrate that SEI significantly mediates the relationship between SEE and SB. Furthermore, VBL positively moderates the link between SEE and SEI, while CE strengthens the association between SEI and SB. The study discusses important theoretical contributions and practical implications for higher education institutions and policymakers, alongside directions for future research.*

Keywords: Social Entrepreneurship Education (SEE), Social Entrepreneurial Intention (SEI), Value-Based Leadership (VBL), Civic Engagement (CE), Sustainable Behavior (EB)

Introduction

The Sustainable Development Goals (SDGs) must be met by the realization of a balance between the economic, social, and environmental aspects worldwide (Gericke et al., 2019). Mendez-Picazo et al. (2021) consider sustainable development as a process that includes opportunities and actions that seek innovative solutions to social and environmental issues. The low level of entrepreneurial skills among graduates is one of the signs of high unemployment rates, and it can hamper the capacity of graduates to hold core values of sustainable development (Broman & Robèrt, 2017). In Pakistan, an increase in unemployment levels, lack of entrepreneurial skills, and insufficient knowledge of social entrepreneurship are barriers to sustainable behavior (Asif et al., 2023).

Sustainable behavior, on the other hand, means the activities people or communities engage in to reduce adverse environmental effects, increase social welfare, and promote ecological equilibrium in the long term (Zhang & Lucey, 2022). Such actions are energy conservation, responsible consumption, recycling, less waste production, community involvement, and sponsoring social and environmental programs (Pan et al., 2023). However, environmental awareness, personal values, social norms, civic engagement, and perception of behavioral control are the factors that make sustainable behavior a multidimensional behavioral and psychological construct (Steg & Vlek, 2022).

Recent studies indicate that sustainable behavior of university students is highly determined by educational interventions, specifically those that concentrate on social entrepreneurship, sustainability education, and experiential learning (Ahmad et al., 2022; Chen et al., 2023). But the literature has shown that traditional and social entrepreneurs are directly positively related to sustainable development, and the contribution of social entrepreneurship is much higher compared to conventional entrepreneurial performance.

^a Lecturer, School of Business Administration, Ghazi University, Dera Ghazi Khan, Punjab, Pakistan.

^b Associate Professor, School of Business Administration, Ghazi University, Dera Ghazi Khan, Punjab, Pakistan.

^c PhD Scholar, School of Business Administration, Ghazi University, Dera Ghazi Khan, Punjab, Pakistan.

Social entrepreneurship is another component to take into consideration when reconsidering the intention of economic growth to sustainable development (Johnson & Schaltegger, 2020). From an academic perspective, social entrepreneurship is important since it shapes young people, especially students, into having the right attitudes, skills, and mindset toward socially filling their needs, as well as encouraging sustainable economic development (Roslan et al., 2022). Thus, enhancing the knowledge, skills, and values of youth to promote sustainable behavior and inclusive development should be reinforced through the introduction of social entrepreneurship in higher education (Roslan et al., 2022). Rodhiah & Hidayah (2023) state that social entrepreneurship is positively affected by the institutional environment. Nevertheless, the researchers have made fewer efforts in examining social entrepreneurship education in building sustainability behavior within the higher education sector (Afridi et al., 2021; Edokpolor, 2020; Iqbal et al., 2018; Stirzaker et al., 2021). Thus, social entrepreneurship education (SEE) has become the subject of current research because it has become a key concern in higher education as an intentional curriculum and extracurricular strategy to equip students with the ability to define social issues and create a sustainable and innovative solution (Edokpolor, 2020).

Empirical literature demonstrates that social entrepreneurship education (SEE) not only enhances the knowledge of students regarding the models of social enterprises but also enhances entrepreneurial mindsets, self-efficacy, and pro-social motivations that are closely linked to creative and sustainable behaviors in academic and community contexts (Afridi et al., 2021). In the meantime, various approaches to education stimulate the student level of knowledge, moral accountability, and desire to behave in a socially responsible manner, which eventually is converted into sustainable daily activities and participation in pro-social actions (Ndou, 2021).

Moreover, some of the behavioral models include the Theory of Planned Behavior, which suggests that sustainable behavior is a product of the interplay among personal norms, perceived control, and pro-environmental attitudes (Bolderdijk & Steg, 2020). Additionally, the attempt to enhance knowledge, skills, and values that students possess in terms of sustainable and creative social enterprises, SEE strengthens the attitudinal beliefs in terms of Social Entrepreneurial Intention (SEI) and results in a positive view of social entrepreneurship as a significant and efficient activity (El-Den et al., 2017). A strong body of research positions social entrepreneurial intention (SEI) as the heart of the education to subsequent action: SEE influences attitudes, perceived behavioral control and subjective norms (most important elements of the Theory of Planned Behavior), which, in turn, leads to increased SEI, and high SEI is a predictor of an increased probability of students acting in a sustainable manner and creating a venture (Tan et al., 2020).

A number of structural and review articles support the mediating position of SEI between the pedagogical inputs (courses, experiential projects, incubators) and the observable behavioral outcomes of university students (Bazan et al., 2020). This justifies the use of SEI as a conceptually consistent mediator in models that consider the relationship between SEE and sustainable behavior of students (Tiwari et al., 2017).

Nevertheless, the present research also highlighted the fact that the role of leadership in educational and institutional settings preconditions the success of SEE that is translated into SEI. The inspirational and normative signals students get with SEE can be increased with value-based leadership (VBL) with the foregrounding of moral purpose, community value and ethical stewardship (Muscat & Whitty, 2009). According to literature on leadership and entrepreneurship, leaders who exemplify civic values, mission orientations, and ethical decision-making enhance identification with social goals in students and the salience of social ventures, which makes VBL a likely moderator that intensifies the relationship between SEE and SEI (Antonakis & Autio, 2014). The decision to position VBL as a moderator thus throws a significant contextual boundary condition of the effects of SEE.

As past research suggests, there is a tendency between intention and action to have an intention- behavior gap, such as civic engagement (CE), which is the active involvement of students in community organizations, volunteerism, and taking initiatives that may reduce the current gap through the provision of social capital

and practice opportunities along with normative reinforcement. Empirical research shows that CE develops not only practical skills but also institutional aids that transform SEI into developed pro-social and sustainable behaviors (Chow et al., 2023). Therefore, the conceptual and empirical rationale of the civic engagement is that because of civic engagement, the relationship between social entrepreneurial intention and sustainable behavior is likely to be stronger: an increased level of civic engagement can enhance the process of translating social entrepreneurial intention into repeatable and sustainable action.

The study topic is rooted in the Theory of Planned Behavior (TPB; Ajzen, 1991) that suggests that social entrepreneurship education (SEE) is the effective factor that defines the attitude (sustainable behavior) of the students, the perception that they control their behavior (social entrepreneurship intention), and the subjective norms (value-oriented leadership and civic engagement) in connection with the social entrepreneurial involvement (Sampene et al., 2023).

This synthesized model thus adds theoretical value in that it can combine TPB-informed SEI mediation with contextual moderators: value-based leadership and civic engagement, as well as practical value in the areas in which universities and policymakers must invest to transform education into prolonged social innovation.

Theoretical Background and Hypothesis Development

Social Entrepreneurship Education (SEE) and Sustainable Behaviors (SB)

Social Entrepreneurship Education (SEE) has become an innovative pedagogical model that prepares students with knowledge, values, and skills required to solve the multifaceted challenges in the social and environmental context (Shahid & Alarifi, 2021). Through interdisciplinary learning, real-world problem solving, and experiential learning, SEE is instrumental in the development of sustainable behaviors (SB) of the university students (Ahmed et al., 2025). Recent research suggests that SEE promotes a robust sense of social value creation, moral accountability, and sustainable thinking, all of which lead to the tendency of students to engage in environmentally responsible and socially conscious actions (Baltador & Grecu, 2023).

To begin with, SEE makes students more sustainable and morally sensitive, so that they can learn about environmental degradation, social inequalities, and sustainability worldwide. This kind of awareness encourages students to embrace sustainable consumption patterns, pro-environmental decisions, and community-based behaviors (Dwivedi et al., 2021). Second, SEE promotes action learning in social innovation projects, which involve students working together to come up with solutions to social problems. This practical experience enhances their ability to convert knowledge into long-term behavior (Kummitha, 2017). Third, SEE enhances pro-social norms, empathy, and civic responsibility that are reliable indicators of sustainable behavior in young adults (Hockerts, 2018).

Social Entrepreneurship Education (SEE) is a major contributor to the development of sustainable behaviors (SB) in university students, and the impact of this particular factor can be effectively elaborated on the Theory of Planned Behavior (Maheshwari, 2022). TPB suggests that behavioral choice is determined by attitude toward behavior, subjective norms, and behavioral control (Ajzen, 1991). SEE improves the sustainability attitude of the students in that it demonstrates awareness of social and environmental issues and integrates pro-social and eco-centric values into the learning experience. It reinforces subjective norms through creating an academic space in which social responsibility, ethical action, and sustainability-oriented thinking are socially approved and academically supported (Hockerts, 2018). Moreover, SEE leads to the improvement of behavioral control perceived by students because it provides them with skills, entrepreneurial skills, and the confidence to pursue sustainable activity and social innovation projects (Kummitha, 2017).

Research demonstrates that together these TPB elements predict sustainable behaviors of students, which means that SEE not only creates sustainability-oriented attitudes and intentions but also equips students with the skills to transform their intentions into specific pro-environmental and socially responsible behaviors (Dwivedi et al., 2021; Carmona & Velasco, 2023). Therefore, using the prism of TPB, SEE can be seen as a

central process that can influence the psychological determinants of sustainability, which will eventually lead to more robust and resilient sustainable actions in students of the university.

Hypothesis 1: Social entrepreneurship education (SEE) positively and significantly affects sustainable behaviors (SB) of students.

Social Entrepreneurship Education (SEE) and Social Entrepreneurship Intention (SEI)

Social Entrepreneurship Education (SEE) is a concept that has been significantly identified as a key catalyst of the Social Entrepreneurship Intention (SEI) among university students, given that it provides learners with the knowledge, skills, and pro-social values to identify the challenges they face in society and work towards the creation of social ventures (Carmona & Velasco, 2023). SEE promotes cognitive knowledge of creating social value among students, exposes them to role models, and offers practical learning experiences that reinforce their sense of social issues, hence developing positive attitudes about social entrepreneurship (Hockerts, 2018).

Moreover, SEE develops empathy, moral responsibility, and social commitment, which are the core psychological motivations that are converted into enhanced SEI (Bacq & Alt, 2018). SEE helps a student to develop more self-efficacy and perceived feasibility as well as social entrepreneurial capabilities, all of which play a significant role in the intention-formation process (Nga & Shamuganathan, 2010; Urban & Kujinga, 2017). Through project-based learning, involvement with the community, and exposure to real-world social problems, students develop intentions. Empirical research also notes that students who attend SEE are more predisposed to develop confidence in meeting the needs of society and have more intentions to start their social ventures or participate in social innovation activities (Satar & Natasha, 2019). Therefore, SEE is a strategic learning tool that can influence the motivational, cognitive, and affective bases of the students, and heighten their desire to become social entrepreneurs.

TPB states that attitude toward the behavior, subjective norms, and perceived behavioral control influence intention (Ajzen, 1991). The attitudes toward social entrepreneurship are positively impacted with the help of SEE, as it promotes the awareness of social problems and evokes empathy as well as supports the belief that social ventures can make a positive impact on society (Hockerts, 2018). It reinforces the subjective norms because it exposes students to social entrepreneurship, collaborative tasks, and a positive academic climate that socializes and approves of prosocial entrepreneurship behaviors (Urban & Kujinga, 2017). Also, SEE increases the perceived behavioral control, providing students with the necessary competencies, self-efficacy, and hands-on experience to detect opportunities and devise social solutions (Bacq & Alt, 2018). Thus, it is hypothesized as

Hypothesis 2: Social entrepreneurship education (SEE) positively and significantly affects social entrepreneurship intention (SEI) of students.

Social Entrepreneurship Intention (SEI) and Sustainable Behaviors (SB)

As stated earlier, Social Entrepreneurship Intention (SEI) is essential in determining the Sustainable Behaviors (SB) in students, especially at the university level where values, competencies, and social responsibility are practiced. SEI represents the desire and willingness of a person to be involved in social value-generating actions that would help in solving the problems faced by society (Mair & Noboa, 2006). The greater the intentions of students toward social entrepreneurship, the higher the chances that such intentions are transformed into actions that can lead to the achievement of sustainability objectives like environmental protection, responsible consumption, volunteering in the community, and social innovation.

The empirical studies prove that SEI is a positive predictor of sustainable behaviors since students who are determined to solve social issues are inclined to believe in the pursuit of behavior that reduces harm and enhances social and environmental outcomes. SEI improves pro-social and pro-environmental attitudes, making people consider sustainability when making their daily choices and entrepreneurial strategies for the

future. Students with better SEI, in educational settings, are more responsible in civic and ethical orientation and ecological awareness, which are pillars of sustainability behaviors (Tiwari et al., 2017).

Moreover, SEI generates a feeling of moral responsibility, and the perceived control over behavior is also an essential element of the Theory of Planned Behavior that, in turn, results in stable sustainable behavior (Ajzen, 1991). It means that students, who are sincerely aimed at generating social value, not only make their practices sustainable, but they also affect others in their social networks and create a larger sustainability-related cultural shift. Thus, it is proposed as:

Hypothesis 3: Social entrepreneurship intention (SEI) positively and significantly affects sustainable behaviors of students.

Mediating Effects of Social Entrepreneurial Intentions (SEI)

There is a central mediating role in the relationship between Social Entrepreneurship Education (SEE) and the sustainable and prosocial behavioral outcomes of students played by Social Entrepreneurial Intentions (Bacq & Alt, 2018). Under the Theory of Planned Behavior, SEE makes students more aware of challenges facing society, more empathetic, and provides students with the skills and knowledge necessary to generate social value, which, combined, constitute core determinants of positive attitudes, subjective norms, and perceived behavioral control determinants that influence intentions (Ajzen, 1991). The enhanced psychological determinants are converted into increased SEI, which, in turn, leads students to commit to socially responsible acts, to become the creators of the social venture, and to behave in a sustainable manner (Hockerts, 2018).

The empirical evidence proves that educational exposure does not directly translate to social entrepreneurial action, but it develops intentions that act as the immediate motivational force according to which SEE produces its effects on the behavioral outcomes of students (Satar & Natasha, 2019; Urban & Kujinga, 2017). Therefore, SEI is an important psychological process that directs the influence of SEE into beneficial social and sustainable behaviors among the students of the university. Therefore, it is proposed as

Hypothesis 4: Social entrepreneurial intentions (SEI) mediate the relationship among social entrepreneurship education (SEE) and sustainable behaviors (SB) of students.

Moderating Effects of Value-Based Leadership (VBL)

Value-Based Leadership (VBL) is a leadership style that involves leading, influencing others, and is focused on the ability to lead with a strong sense of ethical values, moral principles, and serving the greater good (Copeland, 2014). VBL builds upon integrity, authenticity, humility, and social responsibility and motivates followers to act according to the principles that they share and have in common (Groves & LaRocca, 2011). As a powerful contextual variable, Value-Based Leadership (VBL) reinforces and enhances the association between Social Entrepreneurship Education (SEE) and Social Entrepreneurial Intentions (SEI) among university students.

SEE provides students with the knowledge, empathy, and skills needed to solve social problems, but its influence on SEI can be much greater when students are led by exemplary leaders of ethical behavior, integrity, compassion, and a sense of social justice (Muscat & Whitty, 2009). VBL also increases internalization of prosocial values among students since they become a behavioral role model and strengthen moral purpose, and subsequently increases their motivation to pursue social entrepreneurial occupations (Copeland, 2014). Meanwhile, in the theory of planned behavior, when students encounter leadership that focuses on the wellbeing of society and their moral duty to be ethically responsible, they tend to think of social entrepreneurship as something desirable and morally significant, which enhances the attitude and normative elements of intention formation (Ajzen, 1991). It has also been proposed through research that environments of value-based leadership lead to the development of psychological empowerment and ethical efficacy, which

boosts perceived control of behavior of students, further contributing to the relationship between SEE and SEI (Groves & LaRocca, 2011).

Therefore, VBL is a constructive moderator that magnifies the transformation of social entrepreneurial learning into actual entrepreneurial intention by creating a values-rich climate in accordance with the intentions of social entrepreneurship. So, it is hypothesized as

Hypothesis 5: Value-based leadership (VBL) positively moderates the relationship between social entrepreneurship education (SEE) and social entrepreneurial intentions (SEI) in such a way that it amplifies this relationship

Moderating Effects of Civic Engagement (CE)

Civic Engagement (CE) means that individuals actively involve themselves in events that are pertinent to the welfare of their communities and better the state of affairs in the societies (Wray-Lake & Ballard, 2023). It covers a wide range of actions which include volunteering, community service, political involvement, social advocacy, and engagement as part of collective problem solving to enhance social cohesion and the common good (Adler & Goggin, 2005). Nevertheless, the present research portrays that civic engagement (CE) moderates the association between Social Entrepreneurial Intentions (SEI) and Sustainable Behaviors (SB) in a positive way by increasing individuals’ willingness, chances, and desire to turn their intentions into practical and pro-sustainability behaviors (Barnason et al., 2022).

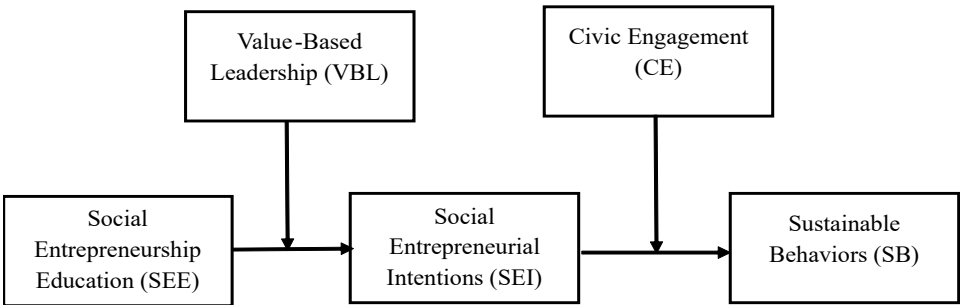
Whereas SEI indicates a psychological preparedness and desire of a student to generate social value, CE offers the social background, opportunities of participation, and experiences in community life that transform intentions into long-lasting environmentally and socially responsible actions. Students who are actively involved in civic life as volunteers, community-problem solvers, or social activists have deeper moral commitments, social networking, and practical exposure to actual social challenges, which leads to behavioral facilitation of entrepreneurial intent (Jennings & Stoker, 2004).

In addition, the planned engagement in civic engagement as described by the Theory of Planned Behavior also strengthens subjective norms and perceived behavioral control, two important determinants of behavior according to the Theory of Planned Behavior (Ajzen, 1991); thus, the students will be able to perform their intentions more confidently and with greater social approval. Empirical research has demonstrated that civic engagement enhances prosocial motivation, builds responsibility towards the welfare of the community, and promotes action that is sustainable in nature (Zaff et al., 2010). Therefore, CE can be viewed as a positive moderator, which intensifies the impact of SEI on SB, because it offers such experiential, normative, and relational frameworks, which allow students to transform intentions into practical sustainable actions. Thus, it is hypothesized as

Hypothesis 6: Civic engagement (CE) positively moderates the relationship between social entrepreneurial intentions (SEI) and sustainable behaviors (SB) in such a way that it amplifies this relationship

Theoretical Framework

Figure 1



Methods

Sample and Procedures

The participants in this study were students at the university level studying in 3 major, publicly operated universities in the south, Punjab, Pakistan, who were chosen to represent a wide range of the academic population in terms of social entrepreneurship education and sustainability-based research. Since this is a research-based paper whose research methodology is quantitative research with a descriptive research design, the current study employed a questionnaire-based survey to collect data.

In the meantime, the analysis of the influence of social entrepreneurship education on social entrepreneurial intention and, consequently, sustainable behavior was conducted using a convenience non-probability sampling method on approximately 340 students, who are representatives of a wide variety of programs in management sciences, commerce, economics, and social sciences, as these disciplines represent a natural setting in which social entrepreneurship education should have an impact. The Islamia University of Bahawalpur was represented by participants in different departments such as Commerce, Accounting and Finance, Entrepreneurship and Innovation, Marketing and International Business, Administrative Sciences, Technology Management, Social Work, Sociology, and Economics.

The sample comprised students of Ghazi University in Business Administration, Economics, and Sociology, and other respondents were obtained at Bahauddin Zakariya University in Sociology, Economics, Commerce, Banking and Finance, and Management Sciences. The variety of programs provided allowed for the appropriate representation of the sample of students with access to programs on leadership, community involvement, and education content and social importance, which was a vital consideration in the analysis of mediating the social entrepreneurial intention and moderating impact of value-based leadership and civil society participation.

The sampling approach was also in line with the national priorities of Pakistan, especially on the empowerment of the youth, peacebuilding, and the global agenda of sustainability. The data collection methods were structured and systematic, which allowed the research to gain a sensible insight into the interaction of educational experiences, leadership orientations, and civic involvement to determine the outcome shown by sustainable behavior among university students.

Measures

Validated and popular scales were used to measure the constructs of this study to ensure reliability and conceptual rigor. The Social Entrepreneurship Education (SEE) was measured through a five-item scale based on the adaptation used by Kedmenec et al. (2016) and Ahmed et al. (2025), measured on a five-point Likert scale. The scale used to measure Sustainable Behaviors (SB) was nine-item and based on Gericke et al. (2019) and Ahmed et al. (2025) but anchored on a five-point Likert response scale.

Social Entrepreneurship Intention (SEI) was assessed by a six-item scale created by Kruse et al. (2025) on a five-point scale. The moderating variable of the SEE and SEI relationship was Value-Based Leadership (VBL), which was measured on a twenty-item scale that was modified based on Garg and Krishnan (2003) and Zhao et al. (2024).

Lastly, the moderator of SEI and SB, Civic Engagement (CE), was assessed with the help of a fourteen-item scale, based on the studies by Doolittle and Faul (2013) and Remr (2023). Each of the scales was put in the form of a five-point Likert scale in order to be consistent across measures, as well as to be able to properly measure perceptions, intentions, and behaviors of students in the framework of social entrepreneurship and sustainability.

Common Method Variance

As this study primarily looked at perceptions of employees in Malaysian organizations and responses were self-reported, there might be an issue of Common Method Variance (CMV) (Lindell & Whitney, 2001). Podsakoff et al. (2012) recommend that, to reduce this potential bias, some procedural and statistical remedies can be employed. In this study, the assurance of anonymity and confidentiality was provided. Konrad & Linnehan (1995) support this process, arguing that anonymity can help reduce such bias even when responses relate to sensitive matters where personal characteristics are assessed. Doty and Glick (1998) assert that validated scales are less sensitive to CMV. Nevertheless, to address the CMV issue, a number of statistical tests were employed following the recommendation of Chang et al. (2010). First, using Harman's one-factor test, all items associated with SEE, SEI, VBL, CE and SB that were subjected to an EFA clearly revealed that common method bias was not a major issue. Secondly, the study employed CFA to further test the effect of CMV. The three-factor model involving SEE, SEI, VBL, CE and SB demonstrated a fairly good fit to the data. Thirdly, a sequential χ^2 difference test indicated that the one-factor model was significantly inferior to the three-factor model, showing CMV was not a potential problem in this study.

Data Analytical Strategies

In order to analyze regression, the study applied the PROCESS macro (Hayes, 2017). The current research put forward mediation and moderation hypotheses. We utilized PROCESS to test the indirect effect with confidence intervals LLCI and ULCI; lower limit and upper limit). The current study adheres to the principle of Cohen about the indirect effect of small effect (0.01), medium effect (0.09), and large effect (0.25) (Preacher & Kelley, 2011).

Results

Descriptive Statistics

Table 1 summarizes the means, standard deviations, as well as the correlation matrices for all of the variables. After establishing the factor structure for all variables, Confirmatory Factor Analysis (CFA) was employed to establish a valid measurement model prior to testing the structural model and to confirm its validity. Hair, Black, Babin, Anderson, and Tatham (2009) suggested that to be considered as having an adequate fit, all the indices must be measured against the following criteria: $\chi^2/df < 3.00$; GFI, CFI, and NFI > 0.90 ; and RMSEA < 0.08 . The result of the variance inflation factor (VIF) tests indicated that the largest VIF was < 2.72 , which is below the accepted threshold of 5 (Neter, Kutner, & Nachtsheim, 1996).

Therefore, no significant multicollinearity was found. To identify the outliers, dfbetas were examined, and we found no standardized dfbetas greater than an absolute value of 0.72. Further, the leverage statistic (hat-value) found no leverage scores > 2 (Neter et al., 1996). These results showed no outliers.

Table 1

Measurement Model Comparison

	Measurement Models	χ^2	Df	χ^2/Df	TLI	CFI	GFI	RMSEA
1	SEE and VBL (2 factor)	282.03	90	3.13	.94	.97	.91	.08
	SEE and VBL (1 factor)	4226.12	135	31.30	.27	.35	.42	.30
2	SEI and CE (2 factor)	158.38	45	3.52	.94	.96	.93	.08
	SEI and CE (1 factor)	1471.33	65	22.63	.48	.57	.60	.30
3	Full Model (5 factor)	470.38	168	2.80	.97	.94	.95	.08
	Full Model (1 factor)	3612.38	209	17.28	.57	.42	.56	.27

Table 2

Means, Standard Deviations and Zero-Order Correlations

Variables	Mean	SD	1	2	3	4	5
Social Entrepreneurship Education (SEE)	3.62	1.14	(.81)				
Social Entrepreneurial Intention (SEI)	3.09	0.81	.25**	(.83)			
Value-Based Leadership (VBL)	4.26	1.01	.65**	.48**	(.80)		
Civic Engagement (CE)	4.63	0.70	.36**	.41**	.26**	(.72)	
Sustainable Behavior (SB)	3.89	1.52	.53**	.42**	.45**	.45**	(.81)

** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

Tests of Hypothesis

To analyze regression, we utilized the PROCESS macro (Hayes, 2017). The present study proposed mediation and moderation hypotheses. Through PROCESS, we tested the indirect effect of confidence intervals, LLCI and ULCI (lower limit and upper limit). According to Preacher and Kelley (2011), the present study follows the guidelines of Cohen for the indirect effect for a small effect (0.01), a medium effect (0.09), and a large effect (0.25).

The regression analysis results for the direct and meditational hypotheses are shown in Table 3 (H1, H2, H3, and H4). Before anything else, Social Entrepreneurship Education (SEE) is related to Sustainable Behavior (SB) ($B=.53, t= 11.42, p< .001$) and Social Entrepreneurial Intention (SEI) ($B=.65, t= 15.19, p< .001$) in a positive way. Social Entrepreneurial Intention (SEI) is positively related to Sustainable Behavior (SB) ($B=.16, t= 2.75, p< .001$). According to these findings, the current study provided support for H1, H2, and H3. That's why these hypotheses (H1, H2, and H3) are accepted in this study. Lastly, Social Entrepreneurship Education (SEE) has a significant indirect impact on Sustainable Behavior (SB) through Social Entrepreneurial Intention (SEI). Therefore, the indirect impact was significant. Furthermore, Scholars also consider the bootstrap estimates and t-95 % bias-corrected confidence intervals when validating the mediation effect. When both intervals (upper and lower limits) do not contain zero, the effects are significant. As a result, Table 3 shows that the indirect effect is not zero (LL=.02, UL=.25). As a result, Hypothesis 4 was supported.

Table 3

Mediated Role of SEI in the Relationship Between SEE and SB

Sr.	Variable	R	R ²	B	SE	T	P
1	Direct effects of SEE on SB	.56	.32	.53	.06	11.42	.000
2	Direct effects of SEE on SEI	.58	.43	.65	.03	15.19	.000
3	Direct effects of SEI on SB	.65	.33	.16	.09	2.75	.000
Bootstrap results for indirect effects							
		M		SE		LL95% CI	UL 95% CI
Effect	SEI	.13		.05		.02	.25

Note: $n= 340$. Bootstrap sample size=5000; SEE= Social Entrepreneurship Education; SEI= Social Entrepreneurial Intention; SB= Sustainable Behavior; VBL= Value-Based Leadership; CE= Civic Engagement; LL = Lower limit; CI = Confidence Interval; UL = Upper Limit.

To test hypothesis 5 and 6 the moderating role of Value-Based Leadership (VBL) and Civic Engagement (CE) here study applied PROCESS macro (Haye, 2018). Through this PROCESS researcher run model 1. The fifth hypothesis stated that the relationship between Social Entrepreneurship Education (SEE) and Social Entrepreneurial Intention (SEI) was moderated by a Value-Based Leadership (VBL). Hypothesis 5 declared that Value-Based Leadership (VBL) moderates the relationship between Social Entrepreneurship Education

(SEE) and Social Entrepreneurial Intention (SEI). The hypothesis results show that the interaction term of Social Entrepreneurship Education (SEE) concealment x Value-Based Leadership (VBL) has a significant impact on Social Entrepreneurial Intention (SEI) ($B = .04$, $SE = .05$, $p < .001$). The conditional direct effect of X on Y (SEE on SEI) at the value of moderator (VBL) was fully supported results are shown in table 4.

After that, study plotted interaction that was significant scores low and high on standard deviation of the Value-Based Leadership (VBL). Slope analysis (Aiken & West, 1991) in figure 2 explain hypothesis 5, which states that when the Value-Based Leadership (VBL) was high, the positive relationship between Social Entrepreneurship Education (SEE) and Social Entrepreneurial Intention (SEI) was stronger ($\beta = 0.04$, $t = 0.44$, $p.06$). Whereas, When the Value-Based Leadership (VBL) was low, then the relationship was weaker ($\beta = 0.60$, $t = 22.37$, $p.01$).

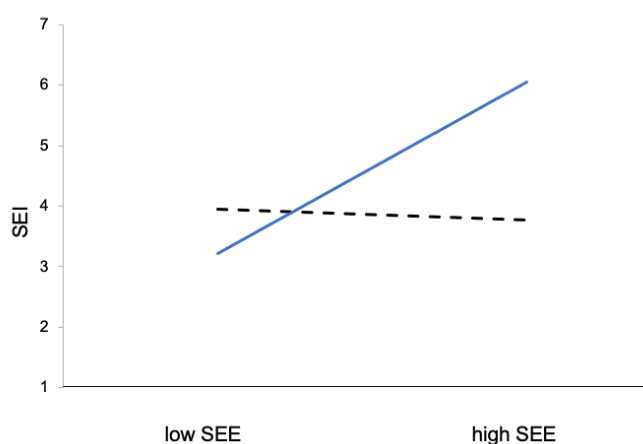
Table 4

Hierarchical Moderated Regression Analysis Results

Predictors		SEI				
	R ²	Estimate	SE	LLCI	ULCI	
Step-1	.59					
Constant		.60	.77	4.85	7.90	
SEE		-.16	.21	-1.36	-.51	
VBL		-.16	.21	-1.47	-.61	
Step 2	ΔR^2	.06				
(SEE x VBL)		.04	.05	.28	.51	
Conditional direct effects of X on Y						
VBL	Effect	Boot SE	T	P	LLCI	ULCI
VBL -1 SD (-.81)	-.19	.10	-1.8	.07	-.40	.01
VBL M (.00)	.24	.04	5.01	.000	.15	.34
VBL +1 SD (.81)	.55	.03	16.31	.000	.48	.62

Note: $n = 340$. Unstandardized regression coefficients. Bootstrap sample size=5000. LL=Lower limit, CI= Confidence Interval, UL= Upper Limit.

Figure 2



The sixth hypothesis stated that the relationship between Social Entrepreneurial Intention (SEI) and Sustainable Behavior (SB) was moderated by a Civic Engagement (CE). Hypothesis 6 declared that Civic Engagement (CE) moderates the relationship between Social Entrepreneurial Intention (SEI) and Sustainable Behavior (SB). The hypothesis results show that the interaction term of Social Entrepreneurial Intention (SEI) concealment x Civic Engagement (CE) has a significant impact on Sustainable Behavior (SB) ($B = .03$, $SE =$

.04, $p < .001$). The conditional direct effect of X on Y (SEI on SB) at the value of moderator (CE) was fully supported results are shown in table 5.

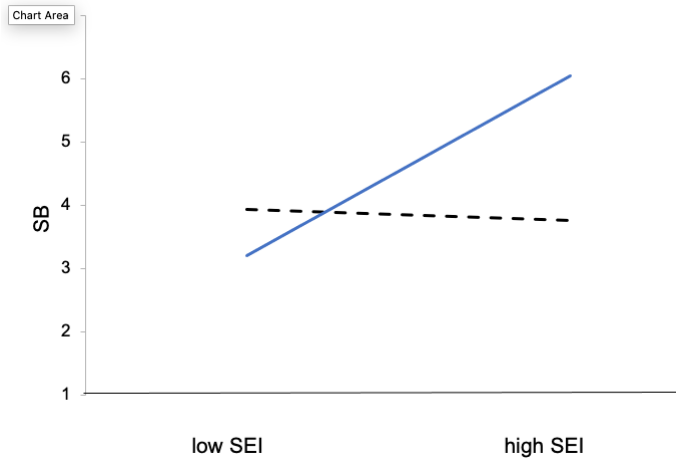
After that, we plotted interaction that was significant scores low and high on standard deviation of the Civic Engagement (CE). Slope analysis (Aiken & West, 1991) in figure 3 explain hypothesis 6, which states that when the Civic Engagement (CE) was high, the positive relationship between Social Entrepreneurial Intention (SEI) and Sustainable Behavior (SB) was stronger ($\beta = 0.06$, $t = 0.33$, $p.02$). Whereas, When the Civic Engagement (CE) was low, then the relationship was weaker ($\beta = 0.50$, $t = 21.32$, $p.01$).

Table 5
Hierarchical Moderated Regression Analysis Results

Predictors		SB				
	R ²	Estimate	SE	LLCI	ULCI	
Step-1						
Constant	.59	.40	.71	3.81	6.70	
SEI		.15	.25	-1.26	-.31	
CE		.12	.26	-1.47	-.41	
Step 2						
	ΔR^2	.05				
(SEI x CE)		.03	.04	.24	.41	
Conditional direct effects of X on Y						
CE	Effect	Boot SE	T	P	LLCI	ULCI
CE -1 SD (-.61)	.14	.11	1.3	.05	-.30	.01
CE M (.00)	.22	.02	4.02	.000	.15	.34
CE +1 SD (.61)	.45	.05	15.31	.000	.48	.52

Note: $n = 340$. Unstandardized regression coefficients. Bootstrap sample size=5000. LL=Lower limit, CI= Confidence Interval, UL= Upper Limit.

Figure 3



Discussion

The results of this study prove that the theory of planned behavior (TPB) is right in its core statement that intentions are the best predictors of behavior, as they develop Social Entrepreneurial Intention (SEI), which leads to sustainable behavior (SB) (Ajzen, 1991). This mediation is consistent with the previous studies, which have demonstrated that educational experiences associated with social entrepreneurship enhances the intentions of the students based on pro-sociality and sustainability (Hameed et al., 2023).

The moderating role of Value-Based Leadership (VBL) also implies that ethical and socially oriented leadership enhances the effect of SEE on SEI, which is also supported by the previous research stating the importance of values and ethical leadership in promoting sustainability-oriented entrepreneurial motivations (Kloot et al., 2022; Hanohov & Baldacchino, 2018). In addition, the positive moderating effect of Civic Engagement (CE) on the SEI-SB relationship demonstrates the significance of social involvement in the intention-behavior translation, which the studies suggest that civic engagement reduces the intention-behavior gap in sustainability and green entrepreneurship (Al-Jubari, 2019; Urban & Kujinga, 2017).

These results are located in the Pakistani context of higher education, highlighting that SEE, value-oriented leadership, and civic engagement allow developing youth as agents of social innovation in line with peacebuilding, national development priorities, and the global sustainability agenda (UNDP Pakistan, 2020). On the whole, the research has expanded TPB because it has shown that leadership values and civic engagement are important contextual processes that enhance the transfer of educational exposure to sustainable and social accountability behavior among students in emerging economies.

Theoretical Contributions

This research contributes to theoretical knowledge in a number of ways. First, the combination of Social Entrepreneurship Education (SEE) and the Theory of Planned Behavior (TPB) help the research to apply the TPB to sustainability and peace-oriented entrepreneurship. In particular, the results prove that Social Entrepreneurial Intention (SEI) is one of the fundamental mediating variables by which educational interventions can influence sustainable behaviors of students. This extends the assumptions of TPB by empirically confirming the intention formation as an important pathway between the pedagogical experiences and the actual pro-social and pro-environmental behavior in university students.

Second, the research contributes significantly to the theoretical enrichment, including Value-Based Leadership (VBL) as a boundary condition in the connection between SEE and SEI. By making VBL a positive moderator, the study demonstrates that leadership based on ethical, moral, and socially responsible values can boost the internalization of the pro-social norms and improve the transfer of the educational exposure to entrepreneurial intentions. This adds to the theory of leadership as it demonstrates that VBL does not only influence organizational or societal outcomes but also increases the inspirational mechanisms inherent to the TPB model.

Third, the incorporation of Civic Engagement (CE) as an inter-mediary between SEI and sustainable behavior offers a broader theoretical framework of the antecedents of sustainability-oriented behaviors. The results indicate that an increasing degree of civic engagement strengthens intentions to behavior implementation, which is one of the long-standing criticisms of TPB on the intention-behavior gap. This makes CE a significant contextual ingredient that facilitates the process of making social oriented entrepreneurial intentions meaningful to sustainable practices.

Fourth, the contextualization of model among Pakistani university students is a contribution to the scarcity of research on social entrepreneurship and sustainability in the emerging economies. It offers culturally based evidence that justifies the relevance and applicability of TPB to collectivistic, developing nation settings where the aspects of peacebuilding, community responsibility, and social cohesion are the primary national concerns. The contribution to the context is especially pertinent to Pakistan in its attempts to match the sector of higher education to global sustainability agendas, such as the Sustainable Development Goals (SDGs), and locally-centered peace and development agendas.

Lastly, the paper contributes to the literature by providing a multi-construct, built-in model which bridges the gap between education, leadership, civic participation, intention formation, and sustainability outcomes. The holistic approach offers a more interdisciplinary theoretical framework on how young people can be mobilized as agents of social change and peacebuilding by means of education and involvement, and

therefore offers a contribution to the world academic discussion of social entrepreneurship and sustainable development.

Implications for Practice

The results of this research have various practical implications to university administrators, policymakers, development agencies, and leaders who strive to ensure that the youths become sustainable and socially responsible.

Firstly, the proved mediating position of the Social Entrepreneurial Intention (SEI) implies that the universities need to shift beyond the traditional and theory-based teaching to experiential and value-driven Social Entrepreneurship Education (SEE). Through the integration of social issues in practice, local community projects, and innovation laboratory, the educational organizations will be in a better position to develop intentions in students to assume socially focused forms of entrepreneurship that will translate to long-term behaviors.

Secondly, the moderating effect of Value-Based Leadership (VBL) also underscores the need to foster leadership practices that focus on ethics, empathy, social justice, and community welfare. University administrators and faculty heads must pursue leadership styles that emulate integrity and social responsibility as such strategies would go a long way in making students more motivated to take part in pro-social entrepreneurial behavior. Value-based principles are to be emphasized in leadership development programs, mentoring structures and faculty training in order to enhance the educational influence on student intentions.

Thirdly, the beneficial mediating power of Civic Engagement (CE) highlights the necessity to incorporate civic-oriented experiences (volunteerism, service-learning, community development projects, and community projects organized by youth, etc.) into educational settings. Providing students with chances to become active participants of civic life makes them more likely to transfer their intentions into the sustainable actions. The universities must hence institutionalize the relationship with the NGOs, local government agencies and the community groups so as to establish a stable avenue of interaction between the students.

Fourthly, the research has significant implications on the bigger national interests of Pakistan such as social cohesion, youth empowerment, and peacebuilding. Universities can be instrumental in producing socially responsible youthful citizens who will be able to deal with inequality and environmental abuse issues as well as community resilience concerns by supporting SEE, value-based leadership, and civic engagement. The results can inform policy makers in the higher education sector and development agencies to implement specific interventions to support the Vision 2025 of Pakistan, National Youth Development Framework, and the Pakistan pledges to the Sustainable Development Goals (SDGs).

Lastly, this joint model can be used by management stakeholders in the higher education and development sectors to instill a social innovation and sustainability culture. Graduates that are not merely academically competent but also socially aware, civically engaged, and determined to contribute to the development of peaceful and sustainable communities can be cultivated not only in institutions that incorporate social value creation into their strategic agendas, but as educational content as well, as a developmental philosophy.

Limitations and Future Research

Although this study presents some useful information, there are various limitations with which future studies can be done. First, the study was based on the cross-sectional design which limits the possibility to make conclusive causal conclusions about the correlations between social entrepreneurship education, intentions, and sustainable behavior. Longitudinal or experimental designs should be used in future studies in order to capture more closely how intentions and behaviors change over time and to verify the directionality of effects. Second, the study used only Pakistani university students, which could narrow down the scope of applying the results to other cultural or educational settings. Given the effect of socio-cultural standards concerning

entrepreneurial intention development and sustainable behavior, future studies may extend the model to other areas, age, or work category in order to analyses cultural diversity and situational stability.

Third, the self-reported measures adopted in the study can bring about possible social desirability or shared methods bias. Despite the procedural remedies, subsequent researchers might use multi-source data, behavioral observations, or objective indicators of sustainable behavior in order to improve the accuracy of measurement.

Fourth, the moderating effects of Value-Based Leadership (VBL) and Civic Engagement (CE) were tested on a perceptual level. The next-generation research can be useful in addressing these constructs with more objective multi-level frameworks, i.e. measuring the behaviors of leaders by asking faculty to evaluate them, or measuring the actual engagement of students in civic activities. Also, other boundary conditions such as social norms, institutional support, digital engagement platforms or entrepreneurial ecosystem could be the subject of future research to further understand the contexts that increase or reduce intention-behavior relationship.

Fifth, although this study does not contradict the national priorities of Pakistan regarding peacebuilding and sustainability, it does not directly include variables concerning the social cohesion, conflict sensitivity, or community resilience. The model can be expanded in the future by adding constructs of peacebuilding to establish the role of social entrepreneurship in alleviating social tensions, enhancing inclusivity, and ensuring harmony in a society.

Finally, even though the Theory of Planned Behavior (TPB) was useful as a theoretical perspective, integrating other theoretical approaches, like Social Cognitive Theory, Moral Development Theory, or Value-Belief-Norm Model, may give further information about the psychological, ethical, and normative dynamics behind sustainable and socially mindful behaviors.

Overall, the future studies need to enhance the rigor of the methodology, open the contextual frame, and introduce more conceptual variables to emphasize the knowledge about the role of social entrepreneurship education in creating sustainable, peaceful, and socially responsible societies.

References

- Adler, R. P., & Goggin, J. (2005). What do we mean by "Civic engagement"? *Journal of Transformative Education*, 3(3), 236-253. <https://doi.org/10.1177/1541344605276792>
- Afridi, S. A., Khan, W., Haider, M., Shahjehan, A., & Afsar, B. (2021). Generativity and green purchasing behavior: Moderating role of man-nature orientation and perceived behavioral control. *Sage Open*, 11(4). <https://doi.org/10.1177/21582440211054480>
- Ahmad, I., Ullah, K., & Khan, A. (2021). The impact of green HRM on green creativity: Mediating role of pro-environmental behaviors and moderating role of ethical leadership style. *The International Journal of Human Resource Management*, 33(19), 3789-3821. <https://doi.org/10.1080/09585192.2021.1931938>
- Ahmed, M., Yousaf, H. Q., Naseer, M., & Rehman, S. (2024). The role of social entrepreneurship education and corporate social responsibility in shaping sustainable behaviour in the education sector of Lahore, Pakistan. *Industry and Higher Education*, 39(5), 514-527. <https://doi.org/10.1177/09504222241297538>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-t](https://doi.org/10.1016/0749-5978(91)90020-t)
- Al-Jubari, I., Hassan, A., & Liñán, F. (2018). Entrepreneurial intention among University students in Malaysia: Integrating self-determination theory and the theory of planned behavior. *International Entrepreneurship and Management Journal*, 15(4), 1323-1342. <https://doi.org/10.1007/s11365-018-0529-0>
- Antonakis, J., & Auto, E. (2014). Entrepreneurship and leadership. In *The psychology of entrepreneurship* (pp. 221-240). Psychology Press.
- Asif, M. H., Zhongfu, T., Irfan, M., Ahmad, B., & Ali, M. (2023). Assessing eco-label knowledge and sustainable consumption behavior in energy sector of Pakistan: An environmental sustainability paradigm. *Environmental Science and Pollution Research*, 30(14), 41319-41332. <https://doi.org/10.1007/s11356-023-25262-8>
- Bacq, S., & Alt, E. (2018). Feeling capable and valued: A prosocial perspective on the link between empathy and social entrepreneurial intentions. *Journal of Business Venturing*, 33(3), 333-350. <https://doi.org/10.1016/j.jbusvent.2018.01.004>
- Baltador, L. A., & Grecu, V. (2023). Developing sustainable entrepreneurs through social entrepreneurship education. *Studies in Business and Economics*, 18(2), 37-47. <https://doi.org/10.2478/sbe-2023-0023>
- Barnason, S., Li, C. J., Hall, D. M., Wilhelm Stanis, S. A., & Schulz, J. H. (2022). Environmental action programs using positive youth development may increase civic engagement. *Sustainability*, 14(11), 6781. <https://doi.org/10.3390/su14116781>
- Bazan, C., Gaultois, H., Shaikh, A., Gillespie, K., Frederick, S., Amjad, A., Yap, S., Finn, C., Rayner, J., & Belal, N. (2020). Effect of the university on the social entrepreneurial intention of students. *New England Journal of Entrepreneurship*, 23(1), 3-24. <https://doi.org/10.1108/neje-05-2019-0026>
- Broman, G. I., & Robèrt, K. (2017). A framework for strategic sustainable development. *Journal of Cleaner Production*, 140, 17-31. <https://doi.org/10.1016/j.jclepro.2015.10.121>
- Chen, P., & Dagestani, A. A. (2023). Greenwashing behavior and firm value – From the perspective of board characteristics. *Corporate Social Responsibility and Environmental Management*, 30(5), 2330-2343. <https://doi.org/10.1002/csr.2488>
- Chow, W., Au, T. Y., & Choi, G. (2023). Youth value, participation, and social entrepreneurship: A study of the role of trust, self-efficacy, and civic engagement in social entrepreneurship. *Asian Spiritualities and Social Transformation*, 161-179. https://doi.org/10.1007/978-981-99-2641-1_10
- Copeland, M. K. (2014). The emerging significance of values-based leadership: A literature review. *International Journal of Leadership Studies*, 8(2), 105-135. https://fisherpub.sjf.edu/business_facpub/5/

- Edokpolor, J. E. (2020). Entrepreneurship education and sustainable development: Mediating role of entrepreneurial skills. *Asia Pacific Journal of Innovation and Entrepreneurship*, 14(3), 329-339. <https://doi.org/10.1108/apjie-03-2020-0036>
- El-Den, J., Adikhari, P., & Adikhari, P. J. J. O. A. I. H. (2017). Social media in the service of social entrepreneurship: Identifying factors for better services. *Journal of Advances in Humanities and Social Sciences*, 3(2), 105-114. <https://doi.org/10.20474/jahss-3.2.4>
- Gericke, N., Boeve-de Pauw, J., Berglund, T., & Olsson, D. (2018). The sustainability consciousness questionnaire: The theoretical development and empirical validation of an evaluation instrument for stakeholders working with sustainable development. *Sustainable Development*, 27(1), 35-49. <https://doi.org/10.1002/sd.1859>
- Groves, K. S., & LaRocca, M. A. (2011). Responsible leadership outcomes via stakeholder CSR values: Testing a values-centered model of transformational leadership. *Journal of Business Ethics*, 98(S1), 37-55. <https://doi.org/10.1007/s10551-011-1019-2>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2009). *Análise multivariada de dados*. Bookman editora.
- Hameed, K., Shahzad, K., & Yazdani, N. (2023). Global incidences of inclusive entrepreneurial ecosystem: Conceptualization and measurement framework. *Journal of the Knowledge Economy*, 14(4), 5033-5064. <https://doi.org/10.1007/s13132-023-01427-1>
- Hanohov, R., & Baldacchino, L. (2017). Opportunity recognition in sustainable entrepreneurship: An exploratory study. *International Journal of Entrepreneurial Behavior & Research*, 24(2), 333-358. <https://doi.org/10.1108/ijeb-12-2015-0275>
- Hayes, A. F., & Rockwood, N. J. (2017). Regression-based statistical mediation and moderation analysis in clinical research: Observations, recommendations, and implementation. *Behaviour Research and Therapy*, 98, 39-57. <https://doi.org/10.1016/j.brat.2016.11.001>
- Hockerts, K. (2018). The effect of experiential social entrepreneurship education on intention formation in students. *Journal of Social Entrepreneurship*, 9(3), 234-256. <https://doi.org/10.1080/19420676.2018.1498377>
- Iqbal, J., Kousar, S., & Ul Hameed, W. (2018). Antecedents of sustainable social entrepreneurship initiatives in Pakistan and outcomes: Collaboration between quadruple helix sectors. *Sustainability*, 10(12), 4539. <https://doi.org/10.3390/su10124539>
- Jennings, M. K., & Stoker, L. (2004). Social trust and civic engagement across time and generations. *Acta Politica*, 39(4), 342-379. <https://doi.org/10.1057/palgrave.ap.5500077>
- Johnson, M. P., & Schaltegger, S. (2019). Entrepreneurship for sustainable development: A review and multilevel causal mechanism framework. *Entrepreneurship Theory and Practice*, 44(6), 1141-1173. <https://doi.org/10.1177/1042258719885368>
- Koe Hwee Nga, J., & Shamuganathan, G. (2010). The influence of personality traits and demographic factors on social entrepreneurship start up intentions. *Journal of Business Ethics*, 95(2), 259-282. <https://doi.org/10.1007/s10551-009-0358-8>
- Kruse, P., Chipeta, E. M., Surujlal, J., & Wegge, J. (2023). Development and validation of a new social entrepreneurial intention scale in South Africa and Germany. *Journal of Social Entrepreneurship*, 16(2), 647-673. <https://doi.org/10.1080/19420676.2023.2205419>
- Maheshwari, G. (2022). Entrepreneurial intentions of university students in Vietnam: Integrated model of social learning, human motivation, and TPB. *The International Journal of Management Education*, 20(3), 100714. <https://doi.org/10.1016/j.ijme.2022.100714>
- Mendez-Picazo, M., Galindo-Martin, M., & Perez-Pujol, R. (2024). Direct and indirect effects of digital transformation on sustainable development in pre- and post-pandemic periods. *Technological Forecasting and Social Change*, 200, 123139. <https://doi.org/10.1016/j.techfore.2023.123139>
- Muscat, E., & Whitty, M. (2009). Social entrepreneurship: Values-based leadership to transform business education and society. *Business Renaissance Quarterly*, 4(1), 31.

- Ndou, V. (2021). Social entrepreneurship education: A combination of knowledge exploitation and exploration processes. *Administrative Sciences*, 11(4), 112. <https://doi.org/10.3390/admsci11040112>
- Pan, X., Shao, T., Zheng, X., Zhang, Y., Ma, X., & Zhang, Q. (2023). Energy and sustainable development nexus: A review. *Energy Strategy Reviews*, 47, 101078. <https://doi.org/10.1016/j.esr.2023.101078>
- Preacher, K. J., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods*, 16(2), 93-115. <https://doi.org/10.1037/a0022658>
- Rodhiah, R., & Hidayah, N. (2023). The influence of institutional environment, experience, and education on social entrepreneurship. *International Journal of Management Science and Application*, 2(2), 76-86. <https://doi.org/10.58291/ijmsa.v2i2.197>
- Roslan, F., Ab Ghani, N. I., Ab Ghani, H. H., Muhammad, N., & Nor, Z. M. Conceptualizing Factors Influencing Local Behavioural Intention Towards Renewable Energy Utilization: A Case Study of Malaysia. <https://doi.org/10.6007/IJARBS/v13-i12/19988>
- Sampene, A. K., Li, C., Khan, A., Agyeman, F. O., & Opoku, R. K. (2022). Yes! I want to be an entrepreneur: A study on university students' entrepreneurship intentions through the theory of planned behavior. *Current Psychology*, 42(25), 21578-21596. <https://doi.org/10.1007/s12144-022-03161-4>
- Stirzaker, R., Galloway, L., Muhonen, J., & Christopoulos, D. (2021). The drivers of social entrepreneurship: Agency, context, compassion and opportunism. *International Journal of Entrepreneurial Behavior & Research*, 27(6), 1381-1402. <https://doi.org/10.1108/ijebr-07-2020-0461>
- Tan, L. P., Le, A. N., & Xuan, L. P. (2019). A systematic literature review on social entrepreneurial intention. *Journal of Social Entrepreneurship*, 11(3), 241-256. <https://doi.org/10.1080/19420676.2019.1640770>
- Tiwari, P., Bhat, A. K., & Tikoria, J. (2017). An empirical analysis of the factors affecting social entrepreneurial intentions. *Journal of Global Entrepreneurship Research*, 7(1). <https://doi.org/10.1186/s40497-017-0067-1>
- Urban, B., & Kujinga, L. (2017). The institutional environment and social entrepreneurship intentions. *International Journal of Entrepreneurial Behavior & Research*, 23(4), 638-655. <https://doi.org/10.1108/ijebr-07-2016-0218>
- Van Valkengoed, A. M., Abrahamse, W., & Steg, L. (2022). To select effective interventions for pro-environmental behaviour change, we need to consider determinants of behaviour. *Nature Human Behaviour*, 6(11), 1482-1492. <https://doi.org/10.1038/s41562-022-01473-w>
- Venhoeven, L. A., Bolderdijk, J. W., & Steg, L. (2020). Why going green feels good. *Journal of Environmental Psychology*, 71, 101492. <https://doi.org/10.1016/j.jenvp.2020.101492>
- Wray-Lake, L., & Ballard, P. J. (2023). Civic engagement across adolescence and early adulthood. *APA handbook of adolescent and young adult development*, 573-593. <https://doi.org/10.1037/0000298-035>
- Zaff, J., Boyd, M., Li, Y., Lerner, J. V., & Lerner, R. M. (2010). Active and engaged citizenship: Multi-group and longitudinal factorial analysis of an integrated construct of civic engagement. *Journal of Youth and Adolescence*, 39(7), 736-750. <https://doi.org/10.1007/s10964-010-9541-6>
- Zhang, D., & Lucey, B. M. (2022). Sustainable behaviors and firm performance: The role of financial constraints' alleviation. *Economic Analysis and Policy*, 74, 220-233. <https://doi.org/10.1016/j.eap.2022.02.003>
- Ziegel, E. R., Neter, J., Kutner, M., Nachtsheim, C., & Wasserman, W. (1997). Applied linear statistical models. *Technometrics*, 39(3), 342. <https://doi.org/10.2307/1271154>