

# The role of CSR education on sustainable entrepreneurial intention: development of a theory of planned behavior-based model in higher education

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## Abstract

Corporate Social Responsibility (CSR) education has become a crucial component in shaping responsible entrepreneurial attitudes. Accordingly, Higher Education Institutions (HEIs) have consistently integrated CSR into their academic curricula to foster ethical awareness and sustainability-oriented values among prospective business leaders. In this context, HEIs play a strategic role in cultivating a generation conscious of social responsibility and sustainable development, although research on the influence of CSR education on sustainable entrepreneurial intentions remains limited in the literature. This study aims to examine the effect of CSR education on students' sustainable entrepreneurial intentions based on the Theory of Planned Behavior (TPB) framework. A quantitative approach was employed using a survey method targeting students currently enrolled in or who have completed CSR-related courses. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that attitude toward behavior and perceived behavioral control significantly affect sustainable entrepreneurial intentions. Conversely, subjective norm does not have a direct effect but becomes significant when moderated by CSR education. These findings reinforce the critical role of CSR education in strengthening pro-social values that encourage more responsible entrepreneurial intentions. This study underscores the importance of integrating CSR education into entrepreneurship curricula to develop future entrepreneurs with a strong orientation toward social and environmental sustainability.

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## Introduction

Higher Education Institutions (HEIs) are transforming their educational approaches to address global sustainability challenges by aligning with the United Nations Sustainable Development Goals (SDGs). In this context, HEIs are shifting from conventional approaches toward education systems oriented around Sustainable Development (SD) (Ashari et al., 2022). As primary agents of social

transformation, HEIs play a pivotal role in promoting global awareness, disseminating knowledge, and embedding sustainability in education systems (De Iorio et al., 2022; Schimperna et al., 2022). SDG 4, which emphasizes inclusive and equitable quality education, positions education as a foundation for public value creation and social change (Kioupi & Voulvoulis, 2019).

In line with these objectives, Corporate Social Responsibility (CSR) education has increasingly become a vital element in fostering responsible entrepreneurial attitudes. Higher Education Institutions (HEIs) are progressively integrating CSR into their curricula to cultivate ethical awareness and sustainability-oriented values among future business leaders (Ratten & Jones, 2021; Kummitha & Kummitha, 2021; Wagner et al., 2021). The notable expansion of CSR-related courses in higher education, which increased by over 50% between 2016 and 2021, reflects growing institutional commitment to this cause (Venturelli et al., 2021). Nevertheless, despite this positive development, the extent to which CSR education effectively shapes entrepreneurial intentions—particularly those oriented toward sustainability—remains underexplored.

Although entrepreneurship is widely recognized for its contributions to economic growth as well as addressing social and environmental challenges (Sharma et al., 2020), there remains a paucity of research specifically investigating how CSR education influences sustainable entrepreneurial intentions. Given the critical importance of integrating sustainability aspects into academic institutions and curricula for prospective entrepreneurs (Huda, 2016; Sharma et al., 2020), further inquiry is warranted to better understand the impact of CSR education on students' attitudes and perceptions related to sustainable entrepreneurship.

Sustainable entrepreneurship, which aims to balance economic, social, and environmental goals, requires a synergy of technical skills and values-driven leadership. Education focused on sustainability is believed to foster competencies that reinforce personal attitudes, social consciousness, and perceived behavioral control in pursuing sustainable business ventures (Diepolder et al., 2021; Shepherd & Patzelt, 2011). However, current efforts to integrate sustainability education often lack sufficient depth, particularly within business faculties, thereby limiting the development of entrepreneurs who are mindful of sustainability (Gorski et al., 2017). In this context, CSR education deserves greater consideration as a fundamental component of sustainability education, given its potential to nurture essential competencies that underpin successful sustainable entrepreneurship. Through CSR education, students can enhance their ethical awareness, social sensitivity, and sense of responsibility—qualities that are pivotal in shaping entrepreneurial intentions with a sustainability focus.

To address this gap, the present study examines the role of CSR education in shaping sustainable entrepreneurial intentions among students, utilizing the Theory of Planned Behavior (TPB) framework. According to TPB, intention is influenced by attitudes toward behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). Prior research has demonstrated that the influence of these components varies across different socio-cultural settings (Fatoki, 2020; Romero-Colmenares & Reyes-Rodríguez, 2022). This study further explores CSR education as a moderating factor within the TPB model to evaluate its potential in enhancing students' sustainable entrepreneurial intentions.

The objective of this research is to comprehensively analyze how CSR education influences sustainable entrepreneurial intentions and to provide empirical evidence on the moderating role of CSR education within the TPB model. It is expected that the findings will demonstrate that CSR education strengthens students' attitudes, social norms, and perceived control related to sustainable entrepreneurship. The results of this study are anticipated to offer valuable insights for HEIs aiming to develop curricula that foster sustainability-oriented entrepreneurial mindsets, contributing to the broader goal of sustainable development.

Despite increasing attention to CSR education globally, existing research remains limited in explicitly examining its impact on sustainable entrepreneurial intentions, particularly within the Indonesian higher education context. Most prior studies tend to focus on general entrepreneurial intentions or CSR awareness without integrating CSR education as a moderating factor within established behavioral models such as the Theory of Planned Behavior (TPB). This gap is especially pronounced in Indonesia, where empirical evidence on how CSR curricula shape students' entrepreneurial mindsets aligned with sustainability principles is scarce.

Theoretically, this study contributes by extending the TPB framework through the incorporation of CSR education as a moderating variable, addressing a neglected aspect in entrepreneurship education research. By doing so, it enriches our understanding of the mechanisms through which educational interventions influence sustainable entrepreneurial intentions, bridging a significant gap in both entrepreneurship and sustainability scholarship. Practically, this research offers actionable insights for Indonesian Higher Education Institutions (HEIs) and policymakers by highlighting the critical role of CSR education in enhancing social norms and behavioral control toward sustainability-oriented entrepreneurship. The findings support the redesign and integration of CSR curricula that not only impart ethical knowledge but also actively foster students' social sensitivity and perceived efficacy in entrepreneurial contexts. This localized evidence provides a valuable foundation for tailoring education strategies that resonate with Indonesia's unique socio-cultural and economic environment, thereby advancing national sustainability goals.

## Method

An explanatory research design with a quantitative approach was used to answer the research questions. The explanatory approach was chosen because the primary objective of this study is to understand and explain the influence of various factors shaping students' sustainable entrepreneurial intentions, as well as to test the moderating role of CSR education within the model. Primary data were collected through a self-administered survey targeting undergraduate students at Satya Terra Bhinneka University. This university is one of the higher education institutions in North Sumatra that has actively adopted and implemented a Corporate Social Responsibility (CSR) curriculum. Additionally, it is the only Climate-U member university in Southeast Asia, demonstrating its commitment to developing an Education for Sustainable Development (ESD) curriculum focused on sustainability issues. The sample criteria for this study included students who are currently taking or have completed the CSR course. The study employed a non-probability sampling method with a purposive sampling technique (Neuman, 2014). The minimum sample size used in this study was 70 respondents.

The determination of the minimum sample size relates to the analytical method used, namely Partial Least Squares – Structural Equation Modeling (PLS-SEM). PLS-SEM was chosen because it is well-suited for testing complex models with multiple variables, including moderating effects like CSR education in this study. It works well with smaller sample sizes and does not require the data to be normally distributed (Hair et al., 2019). Additionally, PLS-SEM allows us to examine both direct and indirect relationships clearly, making it ideal for exploring students' sustainable entrepreneurial intentions. According to Sarstedt et al. (2021), in the PLS-SEM method, the minimum sample size can be determined based on the number of structural paths (i.e., the number of arrows pointing directly to a latent variable) multiplied by ten. In this study's model, there are six structural paths. The research instrument was measured using a 7-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = neutral, 5 = somewhat agree, 6 = agree, 7 = strongly agree). The measurement items used in this study were adapted from several established studies. The four items related to CSR education were derived from the work of Makuya and Changelima (2024). The dimensions of the Theory of Planned Behavior (TPB) were adapted from Truong et al. (2022), while

the items measuring Sustainable Entrepreneurial Intention (SEI) were based on the study by Tehseen and Haider (2021).

An explanatory research design with a quantitative approach was used to answer the research questions. Primary data was collected using an independent survey method on Satya Terra Bhinneka University students who are studying at the undergraduate level. This university is one of the universities in North Sumatra that has adopted and actively implemented the Corporate Social Responsibility (CSR) curriculum. In addition, this university is also the only Climate-U member in Southeast Asia, which shows its commitment in developing the Education for Sustainable Development (ESD) curriculum that focuses on sustainability issues. The sample criteria in this study are students who are currently and have completed CSR courses. This study uses a sample selection method, namely non-probability sampling with purposive sampling type (Neuman, 2014). The minimum sample size used in this study was 70 respondents.

Determination of this minimum sample size is related to the analytical method used, namely Partial Least Square - Structural Equation Modeling (PLS-SEM). According to Sarstedt et al., (2021), in the PLS-SEM method, determining the minimum sample size can be based on the number of structural paths (the number of arrows pointing directly at latent variables) multiplied by 10, of which there are six structural paths in this research model. The research instrument is measured using a 7-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = somewhat disagree, 4 = average, 5 = somewhat agree, 6 = agree, 7 = strongly agree).

### Data Analysis

Primary data collected in this study will be further processed using the Structural Equation Modeling-Partial Least Square (SEM-PLS) method. The first test was conducted to measure the research model by assessing data reliability through loading factors, Composite Reliability (CR), Average Variance Extracted (AVE), Heterotrait-Monotrait Ratio (HTMT), and Cronbach's Alpha (CA). Furthermore, the theoretical model was analyzed by evaluating correlation and discriminant validity. This study also tested for collinearity through the Variance Inflation Factor (VIF). Finally, Structural Equation Modeling (SEM) analysis was used to test the formulated hypotheses. The research findings are then interpreted in the context of the existing theoretical framework and provide practical implications.

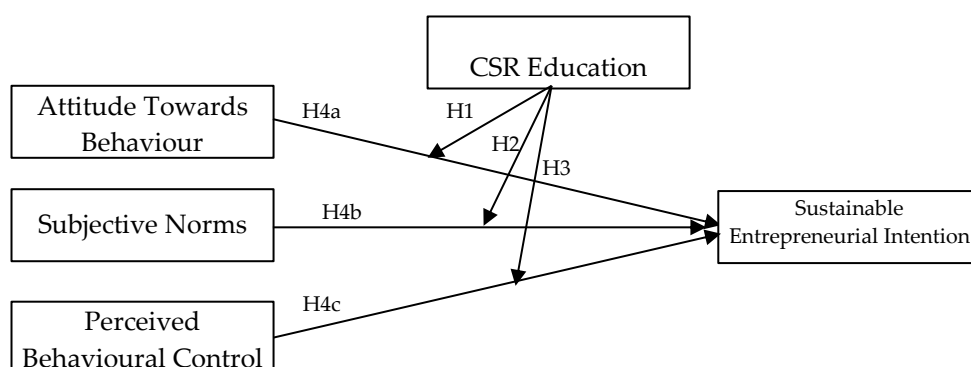


Figure 1. Theoretical Framework

### Result And Discussion

The data for this study were collected from February to April 2025, resulting in a total of 237 completed questionnaires. After screening, 231 responses with complete data were retained for further analysis. Among the respondents, 71% were female, while the remaining 29% were male. The majority of respondents were aged between 18 and 19 years old, and most were in their second

semester (62%). Table 1 presents the demographic characteristics of the respondents, including age, gender, and current semester.

Description	Frequency	Percentage
Gender		
Male	66	29%
Female	165	71%
Age (Years)		
17	14	6%
18	75	32%
19	80	35%
20	37	16%
21	22	10%
22	3	1%
Semester		
Semester 2	143	62%
Semester 4	88	38%

Source: Research Survey Data (2025)

### Model Measurement Assessment

The validity test is seen based on the loading factor of each research instrument where all research instruments have a value in accordance with the recommended value of above 0.708 (Hair et al., 2019). Likewise, the average variance extracted (AVE) value is  $> 0.5$ , Cronbach alpha ( $\alpha$ )  $> 0.7$ , composite reliability ( $\rho_C$ ) and reliability coefficient ( $\rho_A$ )  $> 0.7$  and not more than 0.95 (Hair et al., 2022). Given that the composite reliability value is considered less stringent, Hair et al. (2019) mentioned that you can use  $\alpha$  as a lower limit reference and the  $\rho_C$  value as an upper limit reference in measuring internal consistency reliability. From the value obtained, it shows the reliability and convergent validity of the acceptable construction. Table 2. shows the results of testing convergent validity and reliability. Table 3 shows the heterotrait-monotrait ratio (HTMT) scores for all constructs are lower than 0.85 (Hair et al., 2022), which indicates that all measures have good discriminant validity.

Table 2. Convergent Validity and Reliability Testing Results

Item	Loading	Cronbach's alpha	$\rho_A$	$\rho_C$	AVE
CSR Education (PCR)		0,869	0,872	0,911	0,719
PCR 1	0,802				
PCR 2	0,849				
PCR 3	0,889				
PCR 4	0,850				
Attitude (SK)		0,872	0,884	0,907	0,663
SK1	0,701				
SK2	0,874				
SK3	0,795				
SK4	0,861				
SK5	0,828				
Subjective Norm (NOR)		0,889	0,894	0,931	0,819
NOR1	0,891				
NOR2	0,906				
NOR3	0,916				
Perceived Behavioral Control (KP)		0,907	0,914	0,928	0,683

KP1	0,809				
KP2	0,827				
KP3	0,877				
KP4	0,817				
KP5	0,843				
KP6	0,781				
Sustainable Entrepreneurial Intention (SEI)		0,918	0,919	0,938	0,753
SEI1	0,799				
SEI2	0,872				
SEI3	0,914				
SEI4	0,892				
SEI5	0,859				

Source: Processed Research Survey Data (2025)

Tabel 3. Discriminant Validity Test

Konstruk	HTMT				
	KP	NOR	PCR	SEI	SK
KP					
NOR	0,708				
PCR	0,478	0,474			
SEI	0,738	0,620	0,438		
SK	0,737	0,754	0,495	0,737	

Source: Processed Research Survey Data (2025)

### Structural Model Assessment and Hypothetical Testing

The variance inflation factor (VIF) values were used to look at the collinearity of the research variables with all scores below 3 (Hair et al., 2019) meaning the model can be considered free from common method bias (Kock, 2015). After bootstrapping with 5,000 samples, the overall relationship was measured at the 5% significance level (Hair et al., 2022) and therefore most hypotheses were supported in the model. The relationship between attitude and perceived behavioral control and sustainable entrepreneurial intention was empirically validated, with both predictors exhibiting statistically significant path coefficients ( $\beta = 0,373$  and  $\beta = 0,408$ , p-value < 0,000), thereby confirming their substantial influence within the proposed model. Only the subjective norms relationship was not statistically supported ( $\beta = 0,030$ , p-value = 0,696). Interestingly in our findings, the relationship of subjective norms on entrepreneurial intention moderated by CSR education is significant, meaning that CSR education plays a positive role in strengthening the relationship between the two variables, while the other variables are not significant. Table 4. shows the results of the structural model assessment.

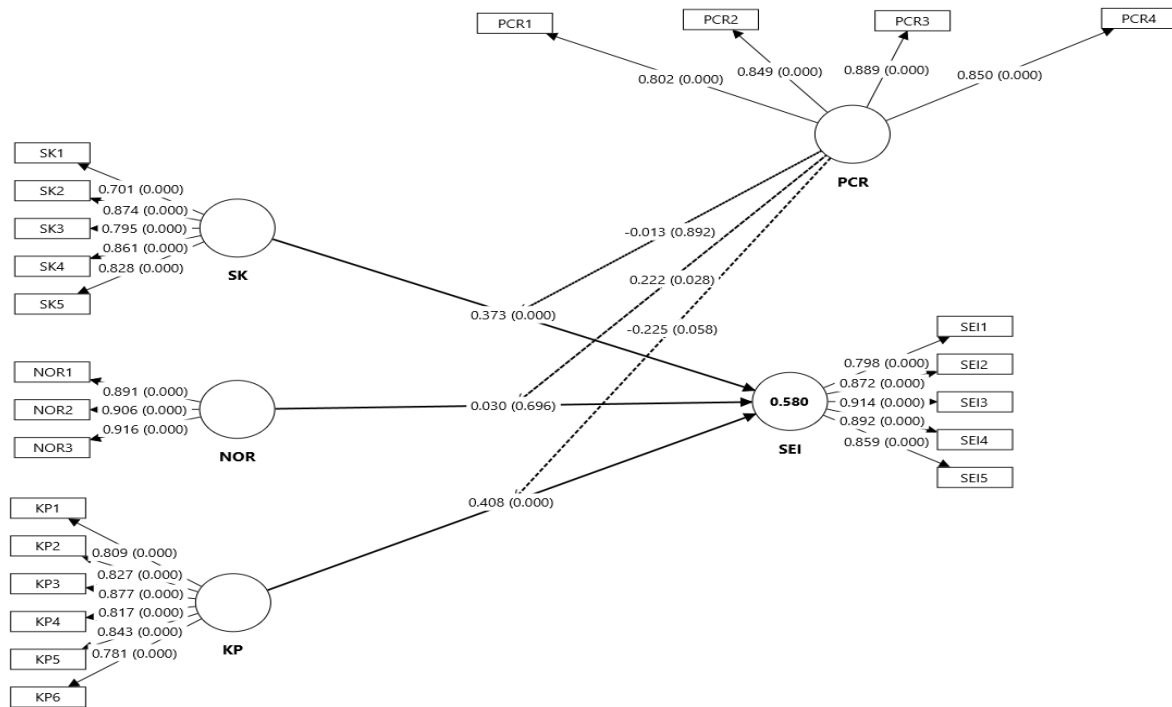


Figure 2. Structural Model Measurement Results

Table 4. Structural Model Assessment

Construct	$\beta$	P-value	VIF	Hypothesis	Conclusion
SK → SEI	0,373	0,000	2,477	H1	Accepted
NOR → SEI	0,030	0,696	2,197	H2	Rejected
KP → SEI	0,408	0,000	2,174	H3	Accepted
Moderation					
PCR x SK → SEI	-0,013	0,892		H4a	Rejected
PCR x NOR → SEI	0,222	0,028		H4b	Accepted
PCR x KP → SEI	-0,225	0,058		H4c	Rejected

Source: Processed Research Survey Data (2025)

### Discussion

This study highlights that attitudes toward behavior and perceived behavioral control play a significant role in influencing students' intentions to engage in sustainable entrepreneurship. A positive attitude toward sustainable business practices, along with strong self-efficacy beliefs, appear to be key drivers of such intentions (Truong et al., 2022; Yasir et al., 2021; Romero-Colmenares & Reyes-Rodríguez, 2022). In this context, the more students value sustainability and feel capable of managing entrepreneurial challenges, the more likely they are to pursue sustainability-oriented ventures.

These findings are consistent with prior studies emphasizing the relevance of attitude and perceived control in supporting sustainable entrepreneurship (Agu et al., 2021; Thelken & de Jong, 2020). However, subjective norms were found to have no significant direct effect on entrepreneurial intention in this study. This may suggest that social expectations or external pressures are not yet strong enough to influence students' decisions to pursue sustainable entrepreneurship. Instead, students may rely more on personal values and internal reflections when considering entrepreneurial activities. This result differs somewhat from previous findings, such as those reported by Gimenez-Jimenez and Harc (2024), who found that subjective norms can significantly

contribute to entrepreneurial intention. Such differences highlight the potential influence of socio-cultural and educational contexts in shaping the role of social norms in entrepreneurial decision-making.

Further analysis reveals that CSR education, when introduced as a moderating variable, significantly strengthens the relationship between subjective norms and sustainable entrepreneurial intention. Although subjective norms alone were not significant, participation in CSR education appears to foster greater ethical awareness and social sensitivity, thus amplifying the relevance of social expectations in shaping entrepreneurial intent. This suggests that CSR education may serve as a catalyst in transforming external social values into personally held intentions related to sustainable entrepreneurship.

On the other hand, CSR education did not significantly moderate the influence of attitudes or perceived behavioral control on entrepreneurial intention. This may be due to the more personal and internally developed nature of these dimensions, which are less likely to be affected by external learning experiences such as CSR-focused curricula. In other words, CSR education seems to be more effective in enhancing social dimensions—like subjective norms—than individual attitudes or perceptions of control. Importantly, these findings should be interpreted with consideration of the specific characteristics of students at Satya Terra Bhinneka University, who represent Indonesia's young generation engaged in sustainable entrepreneurship education. Their socio-cultural backgrounds, values, and local environmental challenges provide a unique context that shapes how CSR education influences their entrepreneurial intentions. Integrating CSR education in a manner that resonates with the local realities of Indonesian students can thus enhance its effectiveness in fostering sustainability-oriented mindsets.

Based on these results, it is recommended that higher education institutions in Indonesia not only include CSR as theoretical knowledge but also improve CSR curriculum design by incorporating experiential learning components. Approaches such as community-based social projects, service learning, or sustainability challenges tailored to local issues can provide students with direct experiences that increase their social sensitivity, ethical awareness, and capacity to address sustainability challenges through entrepreneurship. Such contextualized and practical integration of CSR into entrepreneurship education is essential for developing responsible and sustainability-minded entrepreneurs within Indonesia's diverse socio-economic landscape.

Overall, these findings underscore the importance of integrating CSR education into entrepreneurship curricula. Beyond raising awareness of social responsibility, CSR education can strengthen the impact of social norms, thereby encouraging students to develop stronger intentions to engage in sustainable entrepreneurial ventures.

## **Conclusion**

This study provides a comprehensive overview of how Corporate Social Responsibility (CSR) education plays a vital role in shaping students' sustainable entrepreneurial intentions, particularly by reinforcing their social values. The main findings demonstrate that both attitude toward behavior and perceived behavioral control have a significant positive effect on students' sustainable entrepreneurial intentions. Additionally, while subjective norms do not directly influence intention, their effect becomes significant when moderated by CSR education. These results underscore the critical role of CSR education in amplifying the social dimension of entrepreneurial intention, thereby fostering responsible and sustainability-oriented business mindsets.

Theoretically, this study contributes to the development of the Theory of Planned Behavior (TPB) by introducing CSR education as a novel moderating variable that enhances the influence of subjective norms—an aspect that has received limited attention in prior studies. This research also provides an original contribution by contextualizing the model within the Indonesian higher

education landscape, where empirical insights into CSR education's influence on sustainable entrepreneurship remain scarce. Practically, the study offers valuable implications for curriculum designers and policymakers in higher education. It suggests that CSR education is not merely an ethical supplement, but a strategic pedagogical tool to cultivate sustainability-minded entrepreneurs. Higher Education Institutions (HEIs) are therefore recommended to integrate CSR modules explicitly into entrepreneurship curricula—not only as theoretical content but also through experiential learning models such as community-based social projects, service learning, or sustainability challenges. These formats can provide students with hands-on experiences that strengthen their social sensitivity, ethical awareness, and perceived agency in addressing sustainability issues through entrepreneurial initiatives.

Despite its contributions, the study is limited by its focus on a single university and a relatively small sample size. Moreover, the use of a purely quantitative approach may not fully capture the depth and nuance of students' perceptions and motivations. Future research should consider a broader geographical and institutional scope, as well as adopt mixed-method or qualitative approaches for deeper exploration. Additional factors—such as prior work experience, individual values, and cultural influences—may also offer valuable insights into the formation of sustainable entrepreneurial intentions in diverse educational and socio-economic contexts.

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