

Intention toward sustainable entrepreneurship in Vietnam

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Abstract

Purpose – This study aims to explore the factors influencing sustainable entrepreneurial intentions in Vietnam.

Design/methodology/approach – A survey of 330 university students in Vietnam was conducted, and the data were analyzed using multiple regressions. Applying the theory of planned behavior and the entrepreneurial event model as theoretical lens, the findings suggest that attitude toward sustainability and perceived entrepreneurial feasibility influence positively sustainability-oriented entrepreneurial intentions.

Findings – Contrary to what expected, perceived entrepreneurial desirability has no impact on sustainability-oriented entrepreneurial intentions. In addition, attitude toward sustainability is positively influenced by altruism and intrinsic rewards, whereas perceived entrepreneurial feasibility is positively related to self-efficacy and negatively related to job security. Finally, perceived entrepreneurial desirability is positively influenced by intrinsic rewards.

Originality/value – The research applies the entrepreneurial intention model to sustainable entrepreneurship in the Vietnamese context, highlighting the need to consider variations in entrepreneurial opportunities in intention models and the potential conflict between different work values.

Keywords Entrepreneurship, Entrepreneurial intention, Sustainable entrepreneurship, Vietnam, Attitudes toward sustainability, Perceived entrepreneurial feasibility, Theory of planned behavior

Paper type Research paper

1. Introduction

The urgency to mitigate the detrimental impacts of economic activities on global health, pollution and climate change has triggered extensive scholarly inquiry, underscoring the pivotal role of sustainable entrepreneurship in steering global sustainable transformation (Dean and McMullen, 2007). By harmonizing the triple bottom line – social, environmental and economic goals – sustainable entrepreneurship emerges as a critical lever for enacting



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systemic change (Muñoz and Cohen, 2018; Pizzi *et al.*, 2020; Caputo and Ayoko, 2021). Despite two decades of burgeoning research positioning it as a vital subset of entrepreneurship studies, critical gaps persist, particularly concerning the role of individual entrepreneur characteristics and the overarching systemic impediments that deter the adoption of sustainable practices (Gast *et al.*, 2017; Ferreira *et al.*, 2022; Ramadani *et al.*, 2022; Callagher and Garnevska, 2023). Therefore, researchers have called for further research on both positive and negative factors that may affect one's intention to start a sustainable enterprise (Liao *et al.*, 2022; Pinna, 2020).

Our study interrogates these gaps, particularly focusing on Vietnam, a nation exemplifying rapid economic growth juxtaposed with escalating environmental and social challenges. By doing this, we also respond to the call for further research investigating sustainable entrepreneurial intentions in developing countries (Liñán *et al.*, 2015; Ramadani *et al.*, 2022; Sendawula *et al.*, 2018). Despite Vietnam's strong economic performance, even during the peak of the COVID-19 pandemic and high levels of entrepreneurial intention, the actual adoption of sustainable business practices remains limited and misunderstood (GEM, 2022; Tien *et al.*, 2019). This dichotomy presents a unique context to explore the factors influencing sustainable entrepreneurship, thereby addressing calls for more granular research that moves beyond mere gap spotting to problematizing existing assumptions in sustainable entrepreneurship literature (Liñán *et al.*, 2015; Ramadani *et al.*, 2022; Sendawula *et al.*, 2018).

By applying the theory of planned behavior (TPB) (Ajzen, 1991) to the Vietnamese context, this study aims to elucidate the direct and indirect influences shaping the sustainable entrepreneurship intentions of university students. We complement what has been studied by Vuorio *et al.* (2018) regarding entrepreneurship intentions among university learners in European countries (particularly Finland and Austria). Our research seeks not only to fill the identified research gaps but also to contribute significantly to the broader discourse on sustainable entrepreneurship goals and sustainable development goals, providing insights that are vital for policy formulation and educational frameworks (United Nations' Sustainable Development Goals [SDG] Report, 2022). Thus, this paper addresses the core question:

- Q1. What are the specific factors that foster or hinder sustainable entrepreneurship intentions among young individuals in Vietnam?

2. Literature review

In the past, an organization's success was mostly attributed to its financial performance. Entrepreneurship, in particular, is considered an engine of economic growth through innovation, job creation and technologies, and it has a positive impact on exports and GDP/per capita. In other words, entrepreneurship is seen as generating profit, wealth and economic growth, but it mostly neglects environmental and social challenges (Sarango-Lalangui *et al.*, 2018). Entrepreneurship is crucial as a tool of economic change in developing countries. On the other hand, since the turn of the 20th century, there have been extensive debates over the environmental and social role that businesses play, especially in terms of the potentially harmful impact of the current economy on our planet. The concept of sustainable entrepreneurship has been derived from here and is described as a novel idea that integrates sustainable development with business activities (Schaltegger and Wagner, 2011).

The 1986 Brundtland Report defines sustainable development as "development to meet the needs of the present without compromising the ability of the future generations to meet

their own needs” (The UN, 1987). This definition is based on three pillars, namely, ecology, society and economy, which considers the so-called three Ps: people, planet and profit (The UN, 1987). With the rise of global economic development as an urgent issue affecting sustainable development, it has been suggested that entrepreneurship should not be predicated simply on the generation of wealth. This resulted in the emergence of the sustainable entrepreneurship concept, which has gained a great deal of attention during the past decade (Muñoz and Cohen, 2018; Gast *et al.*, 2017; Theodoraki *et al.*, 2022).

Entrepreneurship has a relevant role in economic growth and business, but not necessarily a productive one (Baumol, 1990), being influenced by information asymmetry and prior knowledge, social networks, the entrepreneur’s personality traits and/or type of opportunity (Ardichvili *et al.*, 2003). In emerging countries, entrepreneurship can also be seen as an alternative to poverty and unemployment.

Specifically, sustainable entrepreneurship is described as “an entrepreneurial approach to use the opportunities in a creative manner for economic advantages, society equity, environmental quality, and cultural preservation on an equal footing” (Majid and Koe, 2012). According to Shepherd and Patzelt, the objective of sustainable entrepreneurship is to:

Preserve nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where the gain is broadly construed to include economic and non-economic gains to individuals, the economy, and society (2010).

One important question is whether the idea of starting sustainable enterprises is less attractive or more complicated to be understood and put into practice in developing countries, where the general attitude is toward escaping poverty rather than toward environmental issues.

People’s entrepreneurial intentions have been mostly investigated by two models (Vuorio *et al.*, 2018; Maheshwari, 2021; Koe *et al.*, 2015). The first model is the TPB, which originated in 1980 from the theory of reasoned action, which aimed to predict an individual’s intention to engage in a given behavior at a specific moment (Ajzen, 1991). Its purpose was to identify behaviors over which humans can apply self-control by means of attitudes, perceived behavioral control and subjective norms (Van Gelderen *et al.*, 2008). The second model, the entrepreneurial event model (EEM), was developed by Shapero and Sokol (1982), to define the interaction between perceived desirability, perceived feasibility and the tendency to act that can lead to the formation of a firm of individuals (Van Gelderen *et al.*, 2008). Although Krueger *et al.* (2000) consider these models to be rivals, they rather overlap substantially. Indeed, Ajzen’s attitudes and perceived behavioral control correspond to Shapero’s perceived desirability and perceived feasibility (Autio, 1997). In both models, therefore, intentions are accounted for by willingness and capacity.

Why are intentions relevant to individuals’ interest in the creation of new businesses? The existing literature suggests that the usual mindset of an entrepreneur tends to prioritize opportunities over risks (Krueger *et al.*, 2000). As the act of identifying opportunities is obviously intentional, we should pay close attention to any entrepreneurial intentions as they allow to understand better and predict entrepreneurship.

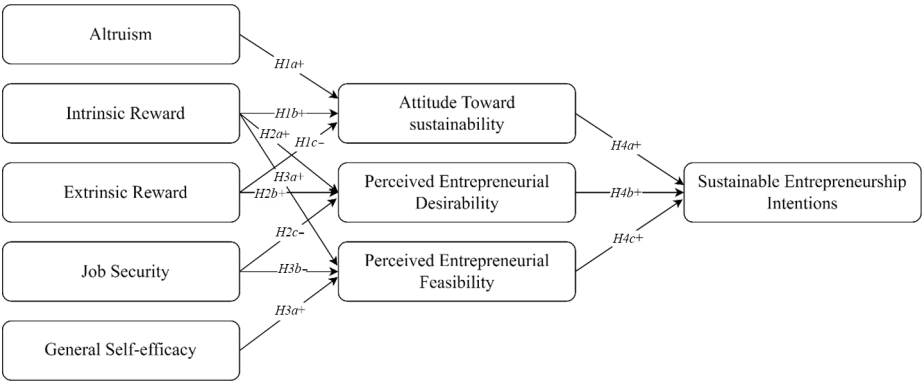
3. Theoretical background and hypotheses development

In our study, we integrated the TPB by Ajzen (1991) and the EEM by Shapero and Sokol (1982) by considering three constructs: attitude toward behaviors, perceived feasibility and perceived desirability. According to Ajzen (1991), it is possible to accurately forecast intentions to engage in specific behaviors once we know about attitudes toward such

conduct, subjective norms (perceived desirability) and perceived behavioral control (perceived feasibility); these intentions, coupled with perceptions of behavioral control, account for a substantial amount of variation in actual behavior (Ajzen, 1991; Riverola and Giones, 2012). Figure 1 represents a research model integrating the elements of the TPB and the EEM.

Sustainability entrepreneurship intention as a concept extends beyond mere entrepreneurial intent to include a specific focus on ecological and social value creation. Entrepreneurs driven by sustainability goals are influenced by their personal beliefs and the perceived societal value of their actions (Bruyere and Rappe, 2007; Parrish and Foxon, 2006). Attitudes and values toward sustainability not only motivate entrepreneurs to adopt eco-friendly practices but are also expected to significantly influence their intentions to engage in sustainable ventures (Majid and Koe, 2012). Hence, we posit that a favorable view of entrepreneurship as a career, combined with a commitment to environmental and social responsibility, fosters intentions aimed at sustainable business practices.

Our study looks at the roles played by four essential work values: altruism, intrinsic rewards, extrinsic rewards and job security because these values are strongly linked to various entrepreneurial forms and tiers, as well as various forms of value creation. Specifically, altruism and security are two additional categories of work values beyond extrinsic and intrinsic that have been recognized in research (Vuorio et al., 2018). Altruism is the philosophy and moral practice of caring about the well-being and/or happiness of other humans or animals, resulting in a material and spiritual quality of life (Krebs, 1970). Specifically, individuals with altruistic ideas are motivated by the opportunity to help others and the community at large, as well as by concern for the environment (Twenge et al., 2010). Altruistic values have an impact on various facets of sustainable entrepreneurship. For example, work values affect one’s attitude toward sustainability because they influence the emphasis placed on social and environmental factors in value creation and, consequently, the types of entrepreneurial opportunities that are recognized. Altruistic principles have been emphasized as behavior-drivers for addressing societal challenges as the desire to produce social value is crucial to social entrepreneurship (Zahra and Wright, 2016). Similar to this, past research has revealed that various altruistic values (universalism, altruism and empathy) are linked to more positive environmental attitudes, the



Source: Authors’ own work
Figure 1. Research model integrating the theory of planned behavior (TPB) and the entrepreneurial event model (EEM)

likelihood of recognizing opportunities for sustainable development and entrepreneurial ambitions through perceived desirability and the formation of altruistic motivations in social entrepreneurship (Hockerts, 2015; Mair and Noboa, 2006; Smith *et al.*, 2010).

Combining three different sorts of values – social, environmental and economic – is the goal of sustainable entrepreneurship (Cohen and Winn, 2007; McMullen and Shepherd, 2006; Schaltegger and Wagner, 2011). Prosocial motivation has been proposed to play a role in the identification and evaluation of entrepreneurial opportunities related to societal and environmental challenges, together with intrinsic and extrinsic motivation (Shepherd, 2015). “The identification and exploitation of economic possibilities through the production of market disequilibria that trigger the change of a sector towards an environmentally and socially more sustainable state” is how sustainable entrepreneurship is described (Hockerts and Wüstenhagen, 2010). However, conflicts in underlying values and motivations impacting an individual’s value creation aspirations are likely to appear when social, environmental and economic value creation are combined (Ferreira *et al.*, 2022). Despite the development of three different types of value in sustainable business, there seems to be a need for balance. On the other hand, prioritizing economic gain would collide with efforts to create social and environmental benefit. Therefore, even if intrinsic incentive is a key factor in encouraging sustainable business, research has shown that power and tradition have a negative effect on people’s views toward the environment (Wesley Schultz and Zelezny, 1999). Intrinsic reward, as opposed to extrinsic reward, is seen to be a motivator of behavior toward sustainability. As was already stated, societal and environmental problems are frequently complicated, and conventional remedies do not seem to be effective (Hockerts, 2015). Due to their complexity and willingness to transform the industry they operate in, innovation and innovativeness have also been linked to social and environmental entrepreneurship (Austin *et al.*, 2012; Hockerts and Wüstenhagen, 2010; Short *et al.*, 2009). Therefore, we hypothesize:

H1a. Altruism positively influences attitudes toward sustainability.

H1b. Intrinsic rewards positively influence attitudes toward sustainability.

H1c. Extrinsic rewards negatively influence attitudes toward sustainability.

Extrinsic rewards are intimately associated with the development of economic values, whereas intrinsic rewards and environmental values are positively related with environmental and social aspects of creation of value and, as a result, are positively linked to sustainable entrepreneurship intentions. Through motivation and attitudes, an individual’s work values are linked to his or her career prospects. Furthermore, values and motivations influence a person’s choice of becoming an entrepreneur. Due to the subjective nature of the decision to engage in self-employment, pursuing self-employment is likely to vary and represent various forms (Moriano and Liñán, 2013).

There appears to be a relationship between perceived entrepreneurial desirability, which characterizes the desirability of entrepreneurship as a career option, and work values, as work values drive the judgment of different alternatives through desirable goals and behaviors. According to the literature, intrinsic and extrinsic rewards are associated with more entrepreneurial ambition, but security tends to impede it. According to the findings of Douglas and Shepherd’s (2017) study, those with greater entrepreneurial aspirations tend to be less risk-averse and to value independence. Similarly, those who prefer an entrepreneurial profession tend to value security less and possess a more innovative and risk-taking attitude than those who favor corporate work. Furthermore, power and innovation are associated with greater entrepreneurial goals and are hence tied to greater perceived entrepreneurial desirability (Brenner and Cochran, 1991).

Intrinsic incentives represent the desire to perform a task for its purpose out of pure love for the activity. Most explanations of intrinsic motivation focus on the relationship between

the performer and the task: individuals are viewed as intrinsically motivated to complete a task because of the involvement in the activity itself and, frequently, the difficulty it brings are sources of pleasure themselves, and finally, completing a task tend to result in a sense of fulfillment. In the working environment, intrinsic rewards are associated with learning, problem-solving and creativity. Employees with intrinsic work values are typically driven by the opportunity to solve difficult problems, be innovative and acquire new skills (Deci and Ryan, 1985). Therefore, we hypothesize that:

H2a. Intrinsic reward impacts perceived entrepreneurial desirability positively.

On the other hand, extrinsic incentives represent the motivations to accomplish an external goal or fulfill an externally imposed constraint. A variety of social-environmental elements, such as expected rewards, expected assessments, competition, surveillance, time constraints and external control over task involvement, can all foster extrinsic drive (Deci and Ryan, 1985). Therefore, extrinsic rewards relate to personal gain and an individual with extrinsic work values seeks to attain monetary benefits, power, prestige and status through their work (Twenge *et al.*, 2010). Therefore, it is hypothesized that:

H2b. Extrinsic reward impacts perceived entrepreneurial desirability positively.

In the context of entrepreneurial intentions, both these types of work values can be recognized in the desire for success and challenge, implying youths' willingness to take on the risks involved in starting their business (Liao *et al.*, 2022; Ozaralli and Rivenburgh, 2016). Job security is the state of having a job that is secure and from which one is unlikely to be dismissed. Unsimilar to altruism, job security defines an individual's preferences for employment safety, stability and harmony at work (Twenge *et al.*, 2010). According to Douglas and Shepherd (2002), pursuing an entrepreneurial profession is connected with increased risk-taking and decreased job stability. Likewise, people who choose a path in entrepreneurial careers tend to prioritize independence and taking risks over security (Barbosa *et al.*, 2016). Therefore, we hypothesize that:

H2c. Job security impacts perceived entrepreneurial desirability negatively.

Bandura (1977) identified self-efficacy as the relationship between profession choice and self-perceptions of individual competence in task performance. In the context of entrepreneurship, the decision to become an entrepreneur or pursue a job is related to the amount of self-efficacy; specifically, individuals with a greater level of self-efficacy tend to favor self-employment with more risks and challenging tasks (Piperopoulos and Dimov, 2015). Similarly, an individual's confidence in his or her level of abilities, skills and knowledge impacts his or her commitment to a particular firm, which in turn affects the outcome of that business (Hechavarría *et al.*, 2017). For instance, self-efficacy and a person's perceived entrepreneurial feasibility are closely related because it reflects the degree to which a person believes he or she can succeed in a specific endeavor (Fitzsimmons and Douglas, 2011; Krueger, 1993). Self-efficacy is linked to both the propensity to become an entrepreneur and the likelihood of being a successful entrepreneur, as it is implied that people with higher levels of self-efficacy tend to demonstrate stronger belief in the accomplishment of their goals (Arrighetti *et al.*, 2016). It is worth noting that this idea plays a significant role in the process of forming intentions in sustainable entrepreneurship (Piperopoulos and Dimov, 2015; Smith and Woodworth, 2012), which suggests a positive relationship between self-efficacy and SEI. It has thus been suggested that self-efficacy can help social

entrepreneurs form their intentions (Smith and Woodworth, 2012). Given these considerations, the following hypothesis is put forth:

H3a. General self-efficacy impacts on perceived entrepreneurial feasibility positively.

Risk-taking, independence and creativity are traits that relate to an entrepreneurial profession. As previously mentioned, perceived entrepreneurial feasibility (Krueger, 1993; Shapero and Sokol, 1982) describes the degree to which a person believes he or she can succeed as a sole proprietor. This suggests that choosing an occupation that permits an individual to act in accordance with those values is associated with success in that particular occupation. The findings of the study demonstrate the links between entrepreneurial careers and taking risks, independence and being creative (Brenner and Cochran, 1991; Douglas and Shepherd, 2017). This suggests that perceived entrepreneurial feasibility is linked to intrinsic reward and security. As taking risks is a prerequisite for entrepreneurship, it appears that valuing job security has a detrimental impact on the perceived entrepreneurial feasibility. On the other hand, innovation and independence are also closely related to entrepreneurial professions, suggesting that those who value intrinsic pleasure will view entrepreneurship as more realistic than people who do not. The following is therefore hypothesized:

H3b. Intrinsic reward impacts the perception of entrepreneurial feasibility positively.

H3c. Security impacts the perception of entrepreneurial feasibility negatively.

The dimension of perceived entrepreneurial desirability reflects the outcome of an individual's perceptions about the attractiveness and worthiness of entrepreneurial activities, influenced by personal attitudes, values and feelings (Riverola and Giones, 2012). In the entrepreneurial landscape, perceived desirability assesses the appeal of becoming an entrepreneur to an individual. This appeal plays a crucial role in shaping one's intent to pursue entrepreneurial ventures. Therefore, it is hypothesized that:

H4a. Perceived entrepreneurial desirability positively impacts intentions toward sustainable entrepreneurship.

Perceived entrepreneurial feasibility concerns an individual's perception of personal capabilities and access to necessary resources to perform a behavior. In this study, it particularly refers to the perceived ability of individuals to initiate and sustain entrepreneurial ventures (Krueger, 1993; Shapero and Sokol, 1982). The perceived ease or difficulty of starting a business is a significant determinant of whether an individual decides to engage in entrepreneurship. Therefore, the following hypothesis is proposed:

H4b. Perceived entrepreneurial feasibility positively impacts intentions toward sustainable entrepreneurship.

Attitude toward sustainability evaluates the extent to which an individual positively or negatively assesses the idea of sustainable entrepreneurship, including considerations of the potential outcomes and ethical implications (Ajzen, 1991). Attitudes toward sustainable practices are crucial as they reflect personal values and influence behavioral intentions in the environmental context (Morianio *et al.*, 2012). Given the increasing importance of sustainability in business, we examine how positive attitudes toward sustainability can drive entrepreneurial intentions. Thus, we hypothesize:

4. Methodology

Quantitative methods were used to examine the relationships between the variables and theoretical constructs identified from the theoretical framework. The TPB was created to predict and explain human social behavior and to represent the foundation for interventions aimed at influencing behavior. As with other theories of this sort, the TPB can serve as a heuristic framework for guiding the formulation of research questions in qualitative studies. Nonetheless, the majority of the conventional approaches based on such theory are quantitative in character, supporting our use of quantitative research methods for this study.

Such methods also reflect a positivist approach, which assumes that scientific discoveries are founded on positive facts as opposed to subjective feelings or, in other words, on measurable observations that result in statistical analyses (Bryant, 1985). We adopted this approach with the aim of forming a generalization of the society deriving from the sample that were observed and surveyed during the research process.

Notably, we adopted a deductive reasoning method aimed at logically deriving the conclusions from a collection of theory-derived premises, with the conclusion being true if all the premises are true (Ketokivi and Mantere, 2010). In accordance with this methodology, a theory and set of hypotheses are established, followed by the formulation of a research strategy to test such hypotheses.

Due to the research's emphasis on young adults, the age range for respondents was established between 18 and 35 years old. In addition, the context of this research is college learners, as higher education has been linked to increased entrepreneurial engagement (Lhan Ertuna and Gurel, 2011). Educational level, indeed, has a crucial impact in business: a higher degree of education has been related with a greater emphasis on social and environmental entrepreneurial goals, whereas it tends to reduce the emphasis on economic entrepreneurial goals (Hechavarría *et al.*, 2017). Similarly, earlier research has demonstrated a link between educational programs and entrepreneurial aspirations (Kuckertz and Wagner, 2010).

In this study, we selected the basic random probability sampling technique, which involves random selection, to draw solid statistical conclusions about the target population (Zikmund, 2000). Using probability sampling, we collected sufficient data to get the most precise findings possible. A minimum observation-to-variable ratio of 5:1 is suggested by the sample-to-variable ratio (Huit *et al.*, 2018), the research model has nine scales with average five items per scale, then the minimum sample size is 45, however, it may not be sufficient if there are outliers. Alternatively, to compute the sample size, Hair *et al.* (2010) developed a more acceptable sample size calculation. The number of observations to one variable (k) ratio is 5 / 1 or 10 / 1. p_j observed variables if the model has m scales. The following formula we used to determine the sample size:

$$n = 5 \times \sum_{j=1}^m p_j$$

The study model contains nine scales and each scale has an average of five observed variables. If $k = 5 / 1$, the minimum sample size is:

$$n = 5 \times \sum_{j=1}^9 5 = 225$$

This means that the model needs at least 225 responses to proceed further.

The survey was generated and presented in both English and Vietnamese via Google Forms, with the terms' definitions provided in every part. The survey was posted on different social media channels such as LinkedIn, Facebook and Instagram. The survey was collected between April and October 2022, the year in which sustainable businesses in the private sector were going to be supported by the Vietnamese government for the 2022–2025 period. We received 330 responses and 299 values were proceeded for further analysis after filtering. The data was then compiled in Microsoft Excel for JASP analysis. The procedure for data analysis includes the following steps.

5. Analysis and results

The data sample consists of 330 university learners from Vietnam (Table 1). 64.2% of the respondents were female, whereas 34.2% of the respondents were male. 60.3% of the respondents were business-related major learners, 13% were studying in languages and social science fields and 10% were in engineering and technologies related majors. The minorities were arts, mathematics and environmental learners. After filtering the age range and missing values, a sample of 299 was investigated in further analyses.

5.1 Reliability test analysis

Table 2 displays summary statistics of the variables included in the survey, specifically mean, variance and significance values. Significance values for each variable are validated as shown in Table 2. These findings indicate that all questionnaire items, which are used to measure six factors in the research model, are internally consistent and highly correlated.

According to Pallant (2020), a Cronbach's alpha value above 0.6 is regarded as a highly reliable and acceptable index. Furthermore, Cronbach's alpha values within the range of 0.60–0.80 are regarded as acceptable but moderate, values between 0.8 and 1.00 are regarded as excellent. Table 3 indicates Cronbach's alpha values for the eight factors, including ALT, INTR, EXT, SEC, GSE, PED, PEF and ATS, SEI are 0.77, 0.774, 0.868, 0.783, 0.892, 0.887, 0.759, 0.60 and 0.799, respectively, based on the entire reliability analysis.

The Kaiser–Meyer–Olkin (KMO) test is a statistical method for evaluating the suitability of data for factor analysis. The test evaluates the sampling sufficiency for each model

Table 1. Descriptive analysis

Demographic variables	Type	Frequency	%
Age group	<18	6	1.8
	18–25	194	58.8
	26–35	109	33
	>35	21	6.4
Gender	Female	212	64.2
	Male	113	34.2
	Did not clarify	5	1.5
Major	Art	16	4.8
	Science and mathematics	29	8.8
	Environments	10	3.0
	Business	199	60.3
	Language and social science	43	13

Source: Authors' own work

Table 2. Summary statistics

Variables	Mean	Variance	Sig.
ALT	4.08	0.394	<0.001
INTR	4.29	0.272	<0.001
EXT	4.18	0.481	<0.001
SEC	2.57	1.159	<0.001
GSE	3.853	0.422	<0.001
ATS	5.492	0.954	<0.001
PED	2.55	1.157	<0.001
PEF	3.89	1.34	<0.001
SEI	4.045	0.390	<0.001

Notes: ALT = Altruism; INTR = Intrinsic Rewards; EXT = Extrinsic Rewards; SEC = Job Security; GSE = General Self-efficacy; PED = Perceived Entrepreneurial Desirability; PEF = Perceived Entrepreneurial Feasibility; ATS = Attitude Toward Sustainability; SEI = Sustainable Entrepreneurial Intention

Source: Authors’ own work

variable and the entire model. The statistic measures the proportion of possible common variation among variables. KMO values between 0.8 and 1 typically indicate acceptable sampling. KMO values smaller than 0.6 indicate inadequate sampling and the need for corrective action. Some scholars, however, set this threshold value at 0.5 (Budaev, 2010). In this case, the KMO measure of sampling adequacy was 0.854, which is above the recommended value of 0.6, meaning that the data are suitable for factor analysis.

Bartlett’s test is a statistical test used to compare the variances of several groups. This result displays the test statistic ($X^2 = 10,084.165$), the degrees of freedom ($df = 990$) and the significance level ($p < 0.001$). As the p -value is less than 0.001, there is substantial evidence that the between-group variances are not equal. This indicates that the groups have distinct differences. Moreover, a chi-squared test was used to examine whether observed and predicted frequencies in categorical data differ significantly. The results show the test statistic ($X^2 = 1,582,622$), the degrees of freedom ($df = 621$) and the significance level ($p < 0.001$). The fact that the p -value is less than 0.001 indicates that there is strong evidence that the observed and predicted frequencies in the data differ significantly. Last but not least, using a benchmark from the work by Ali *et al.* (2017), convergence validity among constructs was observed, with estimated values for corrections within constructs falling below the squared AVE threshold values. Consequently, all AVE square root values were found to be greater than the standard, proving convergent validity. This indicates that data is devoid of social desirability bias, as all constructs differed significantly and were unrelated.

5.2 Regression analysis

The first regression model tested relationships between ATS and ALT, INTR and EXT, respectively (Table 4). The results support *H1a*, suggesting that ALT has a positive effect on ATS. A greater degree of altruism correlates with a more positive outlook on sustainability. Following, as hypothesized, INTR has a positive significant relationship with ATS, meaning *H1b* is supported. Contrary to *H1c* that suggests EXT has negative effect on ATS, the result found no significant relationship between these variables, hence *H4c* is not supported.

Second, the model of PED and job values was examined (Table 5). The model was significant with a high goodness-of fit level, with the independent variables explaining 58% of the variance in the dependent variable. As proposed previously, INTR is positively associated with PED, which supports *H2a*. However, *H2b* is rejected based on the negative

Table 3. Component loadings

	Component loadings	Cronbach's alpha	AVE
ALT1	0.990	0.770	0.8454
ALT2	0.860		
ALT3	0.498		
ALT4	0.922		
ALT5	0.893		
INTR1	0.638	0.774	0.69
INTR2	0.675		
INTR3	0.664		
INTR4	0.727		
INTR5	0.690		
INTR6	0.730		
EXT1	0.818	0.868	0.7873
EXT2	0.818		
EXT3	0.750		
EXT4	0.746		
EXT5	0.752		
EXT6	0.820		
SEC1	0.915	0.848	0.874
SEC2	0.871		
SEC3	0.845		
GSE1	0.714	0.892	0.761
GSE2	0.757		
GSE3	0.698		
GSE4	0.792		
GSE5	0.814		
GSE6	0.758		
GSE7	0.735		
GSE8	0.773		
ATS1	0.847	0.606	0.847
ATS2	0.847		
PED1	0.870	0.906	0.834
PED2	0.860		
PED3	0.788		
PED4	0.868		
PED5	0.880		
PEF1	0.962	0.759	0.766
PEF2	0.476		
PEF3	0.450		
PEF4	0.926		
PEF5	0.866		
SEI1	0.752	0.799	0.7514
SEI2	0.797		
SEI3	0.771		
SEI4	0.629		
SEI5	0.787		

Source: Authors' own work

relationship between EXT and PED; similar results apply to *H2c* for the positive correlation of SEC and PED, which are opposite to the hypotheses proposed.

The third model tested the relationship between work values (INTR and SEC), GSE and PEF (Table 6). First, results show there is no significant relationship between INTR and PEF,

Table 4. Regression model – ATS

	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	RMSE	<i>F</i>	<i>p</i>
<i>H1</i>	0.520	0.271	0.263	0.838	36.463	<0.001
<i>Collinearity statistics</i>						
		Unstandardized	<i>t</i>	<i>p</i>	Tolerance	VIF
<i>H1</i>	(Intercept)	2.020	4.412	< 0.001		
	ALT	0.795	9.665	< 0.001	0.884	1.131
	INTR	0.371	0.250	<0.001	0.681	1.468
	EXT	0.025	0.304	0.762	0.747	1.338

Source: Authors’ own work

Table 5. Regression model – PED

	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	RMSE	<i>F</i>	<i>p</i>
<i>H1</i>	0.765	0.585	0.581	0.696	138.581	<0.001
<i>Collinearity statistics</i>						
		Unstandardized	<i>t</i>	<i>p</i>	Tolerance	VIF
<i>H1</i>	(Intercept)	0.211	0.589	0.556		
	INTR	0.228	2.545	0.011	0.747	1.339
	EXT	−0.137	−2.043	0.042	0.747	1.339
	SEC	0.754	20.108	< 0.001	0.999	1.001

Source: Authors’ own work

Table 6. Regression model – PEF

	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	RMSE	<i>F</i>	<i>p</i>
<i>H1</i>	0.419	0.175	0.167	1.057	20.893	<0.001
<i>Collinearity statistics</i>						
		Unstandardized	<i>t</i>	<i>p</i>	Tolerance	VIF
<i>H1</i>	(Intercept)	2.129	3.921	< 0.001		
	INTR	−0.146	−1.077	0.282	0.755	1.325
	SEC	−0.168	−2.944	0.004	0.997	1.003
	GSE	0.731	6.739	< 0.001	0.754	1.326

Source: Authors’ own work

therefore, *H3a* is not supported. Results support instead *H3b*, which proposed a negative association between SEC and PEF, meaning when an individual’s valuation of security increases by one unit, perceived entrepreneurial feasibility decreases by 0.17 units, according to the findings. *H3c* is also supported, meaning that GSE has a positive effect on the PEF. Higher levels of GSE are associated with greater PEF.

The last model analyzed the relationship between TPB elements: PED, PEF, ATS and SEI (Table 7). The model is statistically significant and explains approximately 36% of the variation. The finding in Table 7 indicates that PEF and ATS have significant relationships with SEI. Although the regression model that consists of ATS witnessed an increase in

Table 7. Regression model – SEI

	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	RMSE	<i>F</i>	<i>p</i>
<i>H1</i>	0.600	0.360	0.354	0.502	55.415	<0.001
<i>Collinearity statistics</i>						
		Unstandardized	<i>t</i>	<i>p</i>	Tolerance	VIF
<i>H1</i>	(Intercept)	1.906	9.824	< 0.001		
	PED	−0.011	−0.401	0.689	0.966	1.035
	PEF	0.093	3.018	0.003	0.926	1.079
	ATS	0.376	12.340	< 0.001	0.953	1.050
	SEC	0.754	20.108	< 0.001	0.999	1.001

Source: Authors' own work

goodness- of-fit to 35.5%, indicating that it is a better model ($p < 0.001$). Moreover, ATS has a positive and significant impact on SEI, meaning that when one unit increases in attitude toward sustainability leads to an increase by 0.37 units in sustainable entrepreneurship intentions. As we discuss in more detail below, these findings offer credence to *H4a* and *H4c*, which propose that attitude toward sustainability and perceived feasibility have a positive effect on sustainability-focused entrepreneurial intention. Surprisingly, this study reveals no correlation between PED and SEI. Consequently, *H4b* is not supported.

6. Discussion

Our study shows that sustainable entrepreneurship intentions of Vietnamese students are driven by perceived entrepreneurial feasibility, which refers to an individual's level of confidence in their ability to initiate and achieve success in a specific venture (Krueger, 1993; Shapero and Sokol, 1982); attitude toward sustainability, which represents an individual's beliefs, values and behaviors, is related to environmental, social and economic sustainability (Ferreira *et al.*, 2022; Ramadani *et al.*, 2022). These findings confirm our hypotheses, validating and complementing the TPB and previous studies that investigated entrepreneurial intention through such model, especially in the field of sustainable and social entrepreneurship (Munir *et al.*, 2018; Hockerts, 2015; van Gelderen *et al.*, 2008).

Regarding the antecedents, work security turns out to have a negative effect on perceived entrepreneurial feasibility, meaning that a person with a higher level of employment security will consider beginning a sustainable firm as less viable. This complements previous results by Douglas and Shepherd (2017) and van Gelderen *et al.* (2008). Second, overall self-efficacy positively influences entrepreneurial viability. Self-efficacy refers to an individual's confidence in their capacity to successfully complete a certain task or achieve a particular objective. Individuals with a high level of self-efficacy have a higher level of perceived entrepreneurial feasibility, indicating that they are more persistent in the face of obstacles and have a greater possibility of completing their goals in founding a sustainable enterprise. This result resonates with statements from previous studies (Smith and Woodworth, 2012; Vuorio *et al.*, 2018; Zhao *et al.*, 2005).

In addition, altruism and intrinsic rewards positively influence attitudes toward sustainability, another aspect supported by previous research (Fitzsimmons and Douglas, 2011; Fayolle *et al.*, 2014; Ge *et al.*, 2016; Shepherd and Patzelt, 2010; Schaltegger *et al.*, 2016). We found an interconnection between sustainable attitude and altruism, which was

defined as the philosophy and moral practice of caring about the well-being and/or happiness of other humans or animals, resulting in a material and spiritual quality of life (Ge *et al.*, 2016). A person with a high level of compassion is more likely to have a positive attitude toward sustainability, according to the findings. Furthermore, the findings show that higher intrinsic rewards are associated with higher sustainability, implying that the satisfaction or pleasure derived from engaging in an activity for its own sake, rather than extrinsic rewards such as money or power, is positively associated with individuals’ beliefs, values and behaviors related to environmental, social and economic sustainability (Koe *et al.*, 2015).

Through quantitative research, we aimed to identify the elements that drive sustainability-oriented entrepreneurial intentions of Vietnamese university learners by using a theoretical model combining the TBP and the EEM. By means of regression analysis, we examined the drivers of sustainable entrepreneurial intention as well as their antecedents. The study’s findings are reported in Table 8.

Let us consider our findings in more detail. First, the study’s findings provide support for the positive role of altruism (*H1a*) and intrinsic reward (*H1b*) on attitudes toward sustainability but not for extrinsic reward (*H1c*). Regarding *H1a*, the study demonstrates that altruism appears to play the most significant impact on attitudes toward sustainability. The literature on social and environmental entrepreneurship supports these findings (Mair and Noboa, 2006; Shepherd and Patzelt, 2010; Wesley Schultz and Zelezny, 1999; Smith *et al.*, 2010).

While the results do not support *H1c*, which proposed that extrinsic rewards are associated with attitude toward sustainability, *H1b* was rather – and perhaps surprisingly – supported, meaning that intrinsic incentives have a positive effect on attitude toward sustainability. This finding differs from Vurio’s ones but is instead consistent with the findings of Fayolle *et al.* (2014), who investigated the impact of work values, motivation and intentions on SEI in Spain and with the findings of Koe *et al.* (2015) in Malaysia, indicating that intentions regarding the adoption of sustainable ventures are entirely driven by intrinsic rewards and attitude toward sustainability. Similarly, Fitzsimmons and Douglas (2011) conducted comparative research of potential entrepreneurs in India, China, Australia and Thailand and identified sustainability mindset and individual work values as the primary determinants of future venture selection. Ge *et al.* (2016) discovered that proactive behavior, altruism with sustainable mentality and entrepreneurial feasibility are the driving elements

Table 8. Hypothesis testing

Hypotheses	Direct effect	<i>p</i> -Value	Result
<i>H1a</i> : ALT → ATS	0.795	<0.001	Supported
<i>H1b</i> : INTR → ATS	0.371	<0.001	Supported
<i>H1c</i> : EXT → ATS		0.762	Not supported
<i>H2a</i> : INTR → PED	0.228	0.011	Supported
<i>H2b</i> : EXT → PED	−0.137	0.042	Not Supported
<i>H2c</i> : SEC → PED	0.754	< 0.001	Not supported
<i>H3a</i> : INTR → PEF		0.282	Not supported
<i>H3b</i> : SEC → PEF	−0.168	0.004	Supported
<i>H3c</i> : GSE → PEF	0.731	<0.001	Supported
<i>H4a</i> : ATS → SEI	0.376	<0.001	Supported
<i>H4b</i> : PED → SEI		0.689	Not supported
<i>H4c</i> : PEF → SEI	0.093	0.003	Supported

Source: Authors’ own work

behind sustainable aspirations and the adoption of sustainable performing ventures. In the same vein, these results are consistent with research by [Shepherd and Patzelt's \(2010\)](#) and [Schaltegger et al. \(2016\)](#) on the relationships between altruism, environmental values and sustainability goals. Based on these results, it can be inferred that a higher degree of altruism and intrinsic rewards are associated with a more favorable intention toward sustainable entrepreneurship.

Second, the outcomes of this study indicate that intrinsic rewards have favorable effects on the perceived desirability of entrepreneurship, corroborating *H2a*. These findings are consistent with previous research, which has demonstrated that people aspiring to be entrepreneurs or acting entrepreneurially value independence, power, innovation and risk-taking ([Brenner and Cochran, 1991](#); [Douglas and Shepherd, 2017](#)). However, *H2b* and *H2c* are not supported because the results show opposite relationships to the hypotheses proposed. These results are similar to those of previous research about different perceptions of entrepreneurship being compatible with job security can affect entrepreneurial intentions ([Randolph-Seng et al., 2015](#)). Specifically, the author explained that entrepreneurship can offer a dependable option for achieving job security, which serves as an alternative to the conventional approach of seeking employment. On the other hand, according to [Meyer and Dean's \(1990\)](#) findings, many individuals view the management of numerous economic connections during the developmental phase of a new enterprise as excessively challenging and risk-oriented, in which they will not be rewarded economically or extrinsically.

In addition, *H3a*, *H3b* and *H3c* were tested and the results supported the relationship between self-efficacy and security with perceived entrepreneurial feasibility, whereas intrinsic rewards were not found to be associated with perceived entrepreneurial feasibility. These results are in line with prior research of sustainable entrepreneurship by [Sher et al. \(2020\)](#). However, a negative relationship between job security and perceived entrepreneurial feasibility (*H3b*) was found, meaning that an individual with higher job security level will be less likely to find starting up a business feasible. This result is consistent with previous findings demonstrating that individuals prioritizing security tend to have fewer entrepreneurial aspirations than those who emphasize freedom and creativity ([Brenner and Cochran, 1991](#); [Douglas and Shepherd, 2017](#); [Vuorio et al., 2018](#)). Regarding the role of self-efficacy, our findings are consistent with previous entrepreneurship literature that link self-efficacy to entrepreneurial ambitions ([Schlaegel and Koenig, 2014](#); [Zhao et al., 2005](#)). Furthermore, recent research on sustainability intentions gives sufficient support for this study ([Shepherd and Patzelt, 2010](#); [Urban and Kujinga, 2017](#)). Therefore, the study reveals that the greater the self-efficacy of aspiring entrepreneurs, the more ambitious their start-up sustainability goals. Likewise, prior research has pointed at self-efficacy as the most important predictor of sustainability ([BarNir et al., 2011](#); [Mair and Noboa, 2006](#)). Consequently, our study supports the claim that self-efficacy and perceived entrepreneurial feasibility are the most significant factors in explaining sustainable start-up objectives.

Finally, in accordance with the TPB, sustainable entrepreneurial intentions are influenced by attitudes toward sustainability and perceived entrepreneurial feasibility. Findings therefore provide support for *H4a* and *H4c*. Results from GEM indicate a growing entrepreneurial ecosystem in Vietnam ([GEM, 2022](#)) plus the high level of self-efficacy ([Doanh, 2021](#)) explain the positive impact of PEF on SEI. These results are in line with other studies' findings in the field of sustainable and social entrepreneurship ([Hockerts, 2015](#); [Urban and Kujinga, 2017](#); [Sher et al., 2020](#)), according to which perceived entrepreneurial desirability and feasibility have a positive effect on entrepreneurship intentions. However, contrary to Vuorio's findings, no correlation was found between perceived entrepreneurial desirability and sustainable entrepreneurial intentions in the Vietnam case (*H4b*). According to existing literature, this might

be due to barriers that developing countries are experiencing in adopting and implementing sustainable businesses, which may explain the different results in Vietnam compared to European countries. In particular, the limited sustainable business opportunities, lack of sustainable knowledge and information and financial barriers, are the possible causes for no significant relationship between PED and SEI (Hoogendoorn *et al.*, 2019; Rizos *et al.*, 2016; Sendawula *et al.*, 2018). Moreover, this result can be explained by the finding of Fitzsimmons and Douglas (2011) reporting a negative interaction between perceived entrepreneurial feasibility and desirability in the entrepreneurship literature. Specifically, the relationship between perceived entrepreneurial desirability and the intention to start a new business is stronger when the perceived feasibility of starting a business is low and weaker when the perceived feasibility is high. As stated in Vuorio *et al.* (2018) study, the link between perceived entrepreneurial desirability, feasibility and intentions may be more nuanced than a straightforward linear relationship. Alternatively, the low impact of perceived entrepreneurial desirability may suggest that specific measures for the context of sustainable entrepreneurship should be established. Therefore, both perceived entrepreneurial desirability and feasibility would be more context specific (Vuorio *et al.*, 2018).

From a theoretical standpoint, the findings presented here have significant implications for the field of sustainable entrepreneurship and contribute to our understanding of intention towards sustainable entrepreneurship in the Vietnamese context. First, this study provides a deeper understanding of the applicability of the TPB and presents a model for measuring SEI that might be applied to other types of entrepreneurship (Schaefer *et al.*, 2015). It contributes to the existing literature on entrepreneurship by showing how various entrepreneurship intention models can be adapted to fit different contexts (Shepherd and Patzelt, 2010). In addition, the results of the study align with previous research that suggests the use of intention models in type-specific entrepreneurship intentions (Ajzen, 1991; Liao *et al.*, 2022; Liñán and Chen, 2009). Overall, the study highlights the importance of understanding variability in entrepreneurial opportunities and how they can affect the choice of intention models, specifically in sustainable entrepreneurship (Ferreira *et al.*, 2022; Ramadani *et al.*, 2022). Furthermore, the study aims to develop a better understanding of the drivers of SEI and expands the scope of sustainable opportunities available to young people.

Our research findings offer valuable insights and numerous opportunities for nurturing sustainable entrepreneurship among aspiring entrepreneurs. First, the findings suggest that there is a significant correlation between sustainable entrepreneurship and an individual's internal values, perceived feasibility and motivations. As a result, it suggests that a person's occupational choices are strongly tied to his or her work values and that the decision to engage in sustainable enterprises is likely to change based on his or her perceptions of occupational outcomes. Thus, the findings demonstrate that work values are key stimulators and building blocks for the development of a sustainable attitude and sustainable entrepreneurship (Jahanshahi *et al.*, 2017). Therefore, enhancing one's capabilities and skills could be a viable strategy for promoting sustainable entrepreneurship and cultivating graduates who are committed to sustainability.

Furthermore, the study highlights the importance of instilling sustainable work values and promoting a positive attitude toward sustainable entrepreneurship among the youth in Vietnam as a developing country. By providing aspiring entrepreneurs with sustainable opportunities, it is possible to cultivate sustainability-driven work values and encourage the creation of sustainable start-ups. This can have a double-edged effect of promoting sustainable entrepreneurship and nurturing sustainable development in the country. To achieve this goal, the study suggests the need to use the experiences of successful entrepreneurs as role models and incorporate purposeful courses on sustainable entrepreneurship in the curricula. In addition,

promoting sustainable venturing within existing businesses can prove to be a significant input in promoting such entrepreneurs across the country and the region. These interventions are crucial as developing countries are facing environmental challenges due to excessive greenhouse gas emissions, poor hygiene and maltreatment of natural resources such as water and air.

7. Conclusions

According to the United Nations' (2022) SDGs Report, current crises, especially the COVID-19 pandemic, climate change and conflicts, are jeopardizing the 2030 Agenda for Sustainable Development and humanity's survival. These crises have a negative impact on a variety of areas, including nutrition, health, education, the environment and security, hurting the SDGs. The crises have halted years of progress in eradicating poverty, hunger, improving health and education and delivering basic utilities. The UN calls for immediate actions to save the SDGs and make significant development for people and the planet by 2030. Economic growth is the most powerful tool for decreasing poverty and enhancing quality of life in emerging countries. Indeed, growth has the potential to create virtuous loops of prosperity and opportunity. Strong growth and job possibilities increase incentives and contribute to the formation of a large and rising group of entrepreneurs, which should put pressure on the government to improve governance. As a result, strong economic growth supports human development, which in turn promotes economic growth. However, given the world's pressing need for a sustainable economy, understanding how to foster sustainable entrepreneurship is now critical.

The primary contribution of this study is the empirical validation of a model of the factors that directly and indirectly influence sustainable entrepreneurship intention in the Vietnam context. This model includes attitude toward sustainability, perceived entrepreneurial desirability and feasibility with their antecedents such as job values and altruism. This study has identified all positive and negative connections between these variables, with the exception of perceived entrepreneurial desirability. Nonetheless, this also indicates that this research can cover academic gaps, contribute to the body of knowledge and provide insights for future references.

This study has limitations relating to the specific context and sample analyzed. First, the hypothesized relationships in this study are restricted to a specific entrepreneurial setting, namely, sustainable entrepreneurship and sustainable value creation. Future studies should further investigate such relationships across different entrepreneurial opportunities and forms of entrepreneurship to give additional evidence for the identified relationships. Second, the scope of the study is restricted to young individuals enrolled in higher education; investigating similar questions in diverse samples (e.g. individuals of diverse age groups, nonstudents and individuals who already are entrepreneurs) would strengthen the model. Third, the data sample is limited; to generalize the results, research in larger samples is required.

Future research might also expand upon cultural variables by investigating the intention of sustainable entrepreneurship in various cultural contexts. It would be useful, for instance, to assess potential differences in the TPB elements in different cultural settings. Second, it would be interesting to investigate the changes in sustainable entrepreneurial intention at different stages of Vietnam's economic development since it might affect the shifts in perceived desirability and perceived feasibility. Finally, a qualitative approach might be used to get a more in-depth knowledge of the experiences and perceptions of sustainable entrepreneurship in the context of Vietnamese learners.

References

- Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.

-
- Ali, W., Frynas, J.G. and Mahmood, Z. (2017), "Determinants of corporate social responsibility disclosure in developed and developing countries: a literature review", *Corporate Social Responsibility and Environmental Management*, Vol. 24 No. 4, pp. 273-294.
- Ardichvili, A., Cardozo, R. and Ray, S. (2003), "A theory of entrepreneurial opportunity identification and development", *Journal of Business Venturing*, Vol. 18 No. 1, pp. 105-123.
- Arrighetti, A., Landini, F., Carli, G. and Monacelli, N. (2016), "Entrepreneurial intention in the time of crisis: a field study", *International Journal of Entrepreneurial Behavior and Research*, Vol. 22 No. 6, pp. 835-859.
-
- Austin, J., Stevenson, H. and Wei-Skillern, J. (2012), "Social and commercial entrepreneurship: same, different, or both?" *Revista de Administração*, Vol. 47 No. 3, pp. 370-384.
- Autio, E. (1997), "'Atomistic' and 'systemic' approaches to research on new, technology-based firms: a literature study", *Small Business Economics*, Vol. 9 No. 3, pp. 195-209.
- Bandura, A. (1977), *Self-efficacy in Changing Societies*, Cambridge University Press, Cambridge.
- Barbosa, S.D., Gerhardt, M.W. and Kickul, J.R. (2016), "The role of cognitive style and risk preference on entrepreneurial self-efficacy and entrepreneurial intentions", *Journal of Leadership and Organizational Studies*, Vol. 13 No. 4, pp. 86-104.
- BarNir, A., Watson, W.E. and Hutchins, H.M. (2011), "Mediation and moderated mediation in the relationship among role models, self-efficacy, entrepreneurial career intention, and gender", *Journal of Applied Social Psychology*, Vol. 41 No. 2, pp. 270-297.
- Baumol, W.J. (1990), "Entrepreneurship: productive, unproductive, and destructive", *Journal of Political Economy*, Vol. 98 No. 5, Part 1, pp. 893-921.
- Brenner, S.N. and Cochran, P. (1991), "The stakeholder theory of the firm: implications for business and society theory and research", *Proceedings of the International Association for Business and Society*, Vol. 2, pp. 897-933.
- Bruyere, B. and Rappe, S. (2007), "Identifying the motivations of environmental volunteers", *Journal of Environmental Planning and Management*, Vol. 50 No. 4, pp. 503-516.
- Bryant, C.G.A. (1985), *Positivism in Social Theory and Research*, Palgrave Macmillan, Red Globe Press, London.
- Budaev, S. (2010), "Multivariate methods and small sample size: combining with small effect size", SSRN Electronic Journal.
- Callagher, L. and Garnevaska, E. (2023), "Multistakeholder impression management tactics and sustainable development intentions in agri-food co-operatives", *Journal of Management and Organization*, pp. 1-21, doi: [10.1017/jmo.2023.35](https://doi.org/10.1017/jmo.2023.35).
- Caputo, A. and Ayoko, O. (2021), "Entrepreneurship, innovation and organizational behaviour", *Journal of Management and Organization*, Vol. 27 No. 4, pp. 621-625, doi: [10.1017/jmo.2021.51](https://doi.org/10.1017/jmo.2021.51).
- Cohen, B. and Winn, M.I. (2007), "Market imperfections, opportunity and sustainable entrepreneurship", *Journal of Business Venturing*, Vol. 22 No. 1, pp. 29-49.
- Dean, T.J. and McMullen, J.S. (2007), "Toward a theory of sustainable entrepreneurship: reducing environmental degradation through entrepreneurial action", *Journal of Business Venturing*, Vol. 22 No. 1, pp. 50-76.
- Deci, E.L. and Ryan, R.M. (1985), "Intrinsic motivation and self-determination in human behavior", *Intrinsic Motivation and Self-Determination in Human Behavior*, Springer US, New York, NY.
- Doanh, D.C. (2021), "The moderating role of self-efficacy on the cognitive process of entrepreneurship: an empirical study in Vietnam", *Journal of Entrepreneurship, Management and Innovation*, Vol. 17 No. 1, pp. 147-174.
- Douglas, E.J. and Shepherd, D.A. (2002), "Self-employment as a career choice: attitudes, entrepreneurial intentions, and utility maximization", *Entrepreneurship Theory and Practice*, Vol. 26 No. 3, pp. 81-90.

-
- Douglas, E.J. and Shepherd, D.A. (2017), "Self-employment as a career choice: attitudes, entrepreneurial intentions, and utility maximization", *Entrepreneurship Theory and Practice*, Vol. 26 No. 3, pp. 81-90.
- Fayolle, A., Liñán, F. and Moriano, J.A. (2014), "Beyond entrepreneurial intentions: values and motivations in entrepreneurship", *International Entrepreneurship and Management Journal*, Vol. 10 No. 4, pp. 679-689.
- Ferreira, J.J., Fernandes, C.I., Veiga, P.M. and Caputo, A. (2022), "The interactions of entrepreneurial attitudes, abilities and aspirations in the (twin) environmental and digital transitions? A dynamic panel data approach", *Technology in Society*, Vol. 71, p. 102121.
- Fitzsimmons, J.R. and Douglas, E.J. (2011), "Interaction between feasibility and desirability in the formation of entrepreneurial intentions", *Journal of Business Venturing*, Vol. 26 No. 4, pp. 431-440.
- Gast, J., Gundolf, K. and Cesinger, B. (2017), "Doing business in a green way: a systematic review of the ecological sustainability entrepreneurship literature and future research directions", *Journal of Cleaner Production*, Vol. 147, pp. 44-56.
- Ge, B., Jiang, D., Gao, Y., Tsai, S.-B. and Rosen, M.A. (2016), "The influence of legitimacy on a proactive green orientation and green performance: a study based on transitional economy scenarios in China", *Sustainability*, Vol. 8 No. 12, p. 1344.
- GEM (2022), "Global Entrepreneurship Monitor Vietnam data", available at: www.gemconsortium.org/data
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2010), *Multivariate Data Analysis*, 7th ed., Prentice Hall, Upper Saddle River. - References - Scientific Research Publishing, Upper Saddle River.
- Hechavarría, D.M., Terjesen, S.A., Ingram, A.E., Renko, M., Justo, R. and Elam, A. (2017), "Taking care of business: the impact of culture and gender on entrepreneurs' blended value creation goals", *Small Business Economics*, Vol. 48 No. 1, pp. 225-257.
- Hockerts, K. (2015), "The Social Entrepreneurial Antecedents Scale (SEAS): a validation study", *Social Enterprise Journal*, Vol. 11 No. 3, pp. 260-280.
- Hockerts, K. and Wüstenhagen, R. (2010), "Greening Goliaths versus emerging Davids - theorizing about the role of incumbents and new entrants in sustainable entrepreneurship", *Journal of Business Venturing*, Vol. 25 No. 5, pp. 481-492.
- Hoogendoorn, B., Van Der Zwan, P. and Thurik, R. (2019), "Sustainable entrepreneurship: the role of perceived barriers and risk", *Journal of Business Ethics*, Vol. 157 No. 4, pp. 1133-1154.
- Huit, G.T.M., Hair, J.F., Proksch, D., Sarstedt, M., Pinkwart, A. and Ringle, C.M. (2018), "Addressing endogeneity in international marketing applications of partial least squares structural equation modeling", *Journal of International Marketing*, Vol. 26 No. 3, pp. 1-21.
- Jahanshahi, A.A., Brem, A. and Bhattacharjee, A. (2017), "Who takes more sustainability-oriented entrepreneurial actions? The role of entrepreneurs' values, beliefs and orientations", *Sustainability*, Vol. 9 No. 10, p. 1636.
- Ketokivi, M. and Mantere, S. (2010), "Two strategies for inductive reasoning in organizational research", *Academy of Management Review*, Vol. 35 No. 2, pp. 315-333.
- Koe, W.L., Omar, R. and Sa'ari, J.R. (2015), "Factors influencing propensity to sustainable entrepreneurship of SMEs in Malaysia", *Procedia - Social and Behavioral Sciences*, Vol. 172, pp. 570-577.
- Krebs, D.L. (1970), "Altruism: an examination of the concept and a review of the literature", *Psychological Bulletin*, Vol. 73 No. 4, pp. 258-302.
- Krueger, N. (1993), "The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability", *Entrepreneurship Theory and Practice*, Vol. 18 No. 1, pp. 5-21.

-
- Krueger, N.F., Reilly, M.D. and Carsrud, A.L. (2000), "Competing models of entrepreneurial intentions", *Journal of Business Venturing*, Vol. 15 Nos 5/6, pp. 411-432.
- Kuckertz, A. and Wagner, M. (2010), "The influence of sustainability orientation on entrepreneurial intentions - investigating the role of business experience", *Journal of Business Venturing*, Vol. 25 No. 5, pp. 524-539.
- Lhan Ertuna, Z.I. and Gurel, E. (2011), "The moderating role of higher education on entrepreneurship", *Education + Training*, Vol. 53 No. 5, pp. 387-402.
- Liao, Y.K., Nguyen, V.H.A. and Caputo, A. (2022), "Unveiling the role of entrepreneurial knowledge and cognition as antecedents of entrepreneurial intention: a meta-analytic study", *International Entrepreneurship and Management Journal*, Vol. 18 No. 4, pp. 1623-1652.
- Liñán, F. and Chen, Y.W. (2009), "Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions", *Entrepreneurship Theory and Practice*, Vol. 33 No. 3, pp. 593-617.
- Liñán, F., Fayolle, A., Liñán, F. and Fayolle, A. (2015), "Research gaps. Research agenda. New Research Perspectives", *International Entrepreneurship and Management Journal*, Vol. 11 No. 4, pp. 907-933.
- McMullen, J.S. and Shepherd, D.A. (2006), "Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur", *Academy of Management Review*, Vol. 31 No. 1, pp. 132-152.
- Maheshwari, G. (2021), "Factors influencing entrepreneurial intentions the most for university students in Vietnam: educational support, personality traits or TPB components?" *Education + Training*, Vol. 63 Nos 7/8, pp. 1138-1153.
- Mair, J. and Noboa, E. (2006), "Social entrepreneurship: how intentions to create a social venture are formed", *Social Entrepreneurship*, Palgrave Macmillan UK, pp. 121-135.
- Majid, I.A. and Koe, W.L. (2012), "Sustainable entrepreneurship (SE): a revised model based on Triple Bottom Line (TBL) the impact of microfinance on poverty reduction: empirical evidence from Malaysian perspective view project household welfare and women empowerment through microcredit financing: evidence from Malaysia view project", *International Journal of Academic Research in Business and Social Sciences*, Vol. 2 No. 6, p. 293.
- Meyer, G.D. and Dean, T.J. (1990), "An upper Echelons perspective on transformational leadership problems in high technology firms", *The Journal of High Technology Management Research*, Vol. 1 No. 2, pp. 223-242.
- Moriano, J.A. and Liñán, F. (2013), "Personal values and entrepreneurial intentions: an empirical study", *Conceptual richness and methodological diversity in entrepreneurship research*, Edward Elgar Publishing, UK, pp. 15-31.
- Moriano, J.A., Gorgievski, M., Laguna, M., Stephan, U. and Zarafshani, K. (2012), "A cross-cultural approach to understanding entrepreneurial intention", *Journal of Career Development*, Vol. 39 No. 2, pp. 162-185.
- Munir, H., Jianfeng, C. and Ramzan, S. (2018), "Personality traits and theory of planned behavior comparison of entrepreneurial intentions between an emerging economy and a developing country", *International Journal of Entrepreneurial Behavior and Research*, Vol. 25 No. 3, pp. 554-580.
- Muñoz, P. and Cohen, B. (2018), "Sustainable entrepreneurship research: taking stock and looking ahead", *Business Strategy and the Environment*, Vol. 27 No. 3, pp. 300-322.
- Ozaralli, N. and Rivenburgh, N.K. (2016), "Entrepreneurial intention: antecedents to entrepreneurial behavior in the U.S.A. and Turkey", *Journal of Global Entrepreneurship Research*, Vol. 6 No. 1, pp. 1-32.
- Parrish, B.D. and Foxon, T.J. (2006), "Sustainability entrepreneurship and equitable transitions to a low-carbon economy", *Greener Management International*, Vol. 2006 No. 55, pp. 47-62.
- Pinna, M. (2020), *Sustainable Entrepreneurship: A Systematic Review of Academic Research* | SpringerLink, Springer, Switzerland.
- Piperopoulos, P. and Dimov, D. (2015), "Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions", *Journal of Small Business Management*, Vol. 53 No. 4, pp. 970-985.

-
- Pizzi, S., Caputo, A., Corvino, A. and Venturelli, A. (2020), "Management research and the UN sustainable development goals (SDGs): a bibliometric investigation and systematic review", *Journal of Cleaner Production*, Vol. 276, p. 124033.
- Pallant, J. (2020), "SPSS survival manual", In Routledge eBooks, doi: [10.4324/9781003117407](https://doi.org/10.4324/9781003117407).
- Ramadani, V., Agarwal, S., Caputo, A., Agrawal, V. and Dixit, J.K. (2022), "Sustainable competencies of social entrepreneurship for sustainable development: exploratory analysis from a developing economy", *Business Strategy and the Environment*, Vol. 31 No. 7, pp. 3437-3453.
- Randolph-Seng, B., Marin, W. and Mitchell, R. (2015), "Job security and entrepreneurship: enemies or allies?" *The Journal of Applied Management and Entrepreneurship*, Vol. 20 No. 1, p. 24.
- Riverola, C. and Giones, F. (2012), "Analysing Nascent entrepreneurs' behaviour through intention-based models", 7th European Conference on Innovation and Entrepreneurship, pp. 482-491.
- Rizos, V., Behrens, A., van der Gaast, W., Hofman, E., Ioannou, A., Kafyeke, T., Flamos, A., Rinaldi, R., Papadelis, S., Hirschnitz-Garbers, M. and Topi, C. (2016), "Implementation of circular economy business models by small and medium-sized enterprises (SMEs): barriers and enablers", *Sustainability (Switzerland)*, Vol. 8 No. 11, p. 1212.
- Sarango-Lalangui, P., Lucia, J., Santos, S. and Hormiga, E. (2018), "The development of sustainable entrepreneurship research field", *Sustainability*, Vol. 10 No. 6, p. 2005.
- Schaefer, K., Corner, P.D. and Kearins, K. (2015), "Social, environmental and sustainable entrepreneurship research: what is needed for sustainability-as-flourishing?" *Organization and Environment*, Vol. 28 No. 4, pp. 394-413.
- Schaltegger, S. and Wagner, M. (2011), "Sustainable entrepreneurship and sustainability innovation: categories and interactions", *Business Strategy and the Environment*, Vol. 20 No. 4, pp. 222-237.
- Schaltegger, S., Hansen, E.G. and Lüdeke-Freund, F. (2016), "Business models for sustainability: origins, present research, and future avenues", *Organization and Environment*, Vol. 29 No. 1, pp. 3-10.
- Schlaegel, C. and Koenig, M. (2014), "Determinants of entrepreneurial intent: a meta-analytic test and integration of competing models", *Entrepreneurship Theory and Practice*, Vol. 38 No. 2, pp. 291-332.
- Sendawula, K., Turyakira, P. and Bananuka, J. (2018), "Adoption of sustainable entrepreneurship in small and medium enterprises (SMEs) in developing countries: literature review", *Journal of Advances in Social Science and Humanities*, Vol. 4.
- Shapero and Sokol (1982), "Shapero and Sokol... | Download Scientific Diagram. (n.d.)", Entrepreneurial event model, available at: www.researchgate.net/figure/Entrepreneurial-event-model-Shapero-Sokol-1982-Shapero-and-Sokol-1982-developed-a_fig1_333798266 (accessed 19 November 2022).
- Shepherd, D.A. (2015), "Party On! A call for entrepreneurship research that is more interactive, activity based, cognitively hot, compassionate, and prosocial", *Journal of Business Venturing*, Vol. 30 No. 4, pp. 489-507.
- Shepherd, D.A. and Patzelt, H. (2010), "The new field of sustainable entrepreneurship: studying entrepreneurial action linking 'what is to be sustained' with 'what is to be developed'", *Entrepreneurship Theory and Practice*, Vol. 35 No. 1, pp. 137-163.
- Sher, A., Abbas, A., Mazhar, S. and Lin, G. (2020), "Fostering sustainable ventures: dDrivers of sustainable start-up intentions among aspiring university students in Pakistan", *Journal of Cleaner Production*, Vol. 262, p. 121269.
- Short, J.C., Moss, T.W. and Lumpkin, G.T. (2009), "Research in social entrepreneurship: past contributions and future opportunities", *Strategic Entrepreneurship Journal*, Vol. 3 No. 2, pp. 161-194.
- Smith, I.H. and Woodworth, W.P. (2012), "Developing social entrepreneurs and social innovators: a social identity and self-efficacy approach", *Academy of Management Learning and Education*, Vol. 11 No. 3, pp. 390-407.

- Smith, B.R., Kickul, J. and Coley, L. (2010), "Using simulation to develop empathy and motivate agency: an innovative pedagogical approach for social entrepreneurship education", *Handbook of Research in Entrepreneurship Education*, Vol. 3, pp. 13-24.
- Theodoraki, C., Dana, L.P. and Caputo, A. (2022), "Building sustainable entrepreneurial ecosystems: a holistic approach", *Journal of Business Research*, Vol. 140, pp. 346-360.
- Tien, N.H., Anh, D.B.H. and Ngoc, N.M. (2019), "Corporate financial performance due to sustainable development in Vietnam", *Corporate Social Responsibility and Environmental Management*, Vol. 27 No. 2, pp. 694-705, doi: [10.1002/csr.1836](https://doi.org/10.1002/csr.1836).
- Twenge, J.M., Campbell, S.M., Hoffman, B.J. and Lance, C.E. (2010), "Generational differences in work values: leisure and extrinsic values increasing, social and intrinsic values decreasing", *Journal of Management*, Vol. 36 No. 5, pp. 1117-1142.
- United Nations (UN) (1987), Report of the World Commission on Environment and Development: Our Common Future Towards Sustainable Development 2. Part II. Common Challenges Population and Human Resources 4.
- United Nations (2022), *The Sustainable Development Goals Report*.
- Urban, B. and Kujinga, L. (2017), "The institutional environment and social entrepreneurship intentions", *International Journal of Entrepreneurial Behavior and Research*, Vol. 23 No. 4, pp. 638-655.
- Van Gelderen, M., Brand, M., Van Praag, M., Bodewes, W., Poutsma, E. and Van Gils, A. (2008), "Explaining entrepreneurial intentions by means of the theory of planned behaviour", *Career Development International*, Vol. 13 No. 6, pp. 538-559.
- Vuorio, A.M., Puumalainen, K. and Fellnhofer, K. (2018), "Drivers of entrepreneurial intentions in sustainable entrepreneurship", *International Journal of Entrepreneurial Behavior and Research*, Vol. 24 No. 2, pp. 359-381.
- Wesley Schultz, P. and Zelezny, L. (1999), "Values as predictors of environmental attitudes: evidence for consistency across 14 countries", *Journal of Environmental Psychology*, Vol. 19 No. 3, pp. 255-265.
- Zahra, S.A. and Wright, M. (2016), "Understanding the social role of entrepreneurship", *Journal of Management Studies*, Vol. 53 No. 4, pp. 610-629.
- Zhao, H., Hills, G.E. and Seibert, S.E. (2005), "The mediating role of self-efficacy in the development of entrepreneurial intentions", *Journal of Applied Psychology*, Vol. 90 No. 6, pp. 1265-1272.
- Zikmund, W.G. (2000), *Business Research Methods*, 6th ed., The Dryden Press, Fort Worth - Scientific Research Publishing, Fort Worth.

Further reading

- Swaney, K.B., Allen, J., Casillas, A., Hanson, M.A. and Robbins, S.B. (2012), "Interests, work values, and occupations: predicting work outcomes with the work keys fit", *Journal of Career Assessment*, Vol. 20 No. 4, pp. 359-374.
- Tonglet, M., Phillips, P.S. and Read, A.D. (2004), "Using the theory of planned behaviour to investigate the determinants of recycling behaviour: a case study from Brixworth, UK", *Resources, Conservation and Recycling*, Vol. 41 No. 3, pp. 191-214.

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