

Investigate the relationships leading to green entrepreneurial behaviour: A case study of FPT University Da Nang

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Abstract—The negative environmental impacts of globalization have given birth to the concept of green entrepreneurship, which might still be absent in many courses in higher education. Furthermore, despite its prominent role, intention does not translate into behaviour that makes entrepreneurial activities happen. Therefore, green entrepreneurial behaviour in students plays an essential part in helping develop and enhance green entrepreneurship. This study tries to investigate the factors affecting the green entrepreneurial behaviour of students. An online questionnaire assessing the impact of 5 factors was distributed to 157 students from FPT University Da Nang in Vietnam, who have had experience studying any course related to entrepreneurship in the school. The results show the relations and correlations between five important factors and Green entrepreneurial behaviour. These findings could contribute to the literature relating to Green entrepreneurial behaviour and help educators in making decisions for green entrepreneurial development in higher school.

Index Terms—Green entrepreneurial behaviour, University entrepreneurial support, Green entrepreneurial intention.

I. INTRODUCTION

Because of the globalization trend, organizations are forced to obtain competitive advantages. This has led to many harms to the natural environment, such as environmental pollution, natural resources being unconsciously consumed, and the decrease in biodiversity [1]. Therefore, the demand for green entrepreneurs, the enablers of green entrepreneurship, is expanding since they prioritize 2 aspects of business model: creating more acceptable quality employment with the utilization of environmentally friendly processes, while also moderating the total negative effect on the environment from people or companies using the final product or service [2]. Many higher education institutions have provided courses related to entrepreneurship, but they lack experience in introducing sustainability and environmentally-friendly business topics into the study programmes [3]. Furthermore, despite the fact that most studies mention intention as a notable conterminous predictor of how a person does green activities [2], it does not always lead to actual behaviour to do entrepreneurship related activity [4] [5] [6] [7] [8]. Therefore, the demand for a group of factors that directly affect green entrepreneurial behaviour of students is often a pressing concern. Because of sustainable values are of interest to the FPT student community as well as the school administration [9], but students at FPT still lack knowledge and understanding about green entrepreneurship

during their studies at the school, this study will emphasize the case of FPT University Da Nang, Vietnam to discover the factors affecting green entrepreneurial behaviour of students in higher education.

In this study, from the results of the literature review, the authors propose a model of 5 impacting factors, including University entrepreneurial support, Green entrepreneurial intentions, Commitment to the environment, Entrepreneurial motivation, and Entrepreneurial education to examine how they affect green entrepreneurial behaviour of students in higher education in Da Nang, Vietnam. The remaining structure of the paper continues with literature review to develop the hypotheses and theoretical framework. After that, the research method will be presented with samples, procedure and the related measurements. The results are then presented, followed by an in-depth discussion and observations. Based on the discussion, the final part of the paper identifies limitations and suggests future research directions.

II. LITERATURE REVIEW

A. Resource-Based View Theory

The resource-based view (RBV) expresses the relationships between resources, capabilities, and competitive advantage of the firm [10]. The theory emphasizes the internal resources to progress a competitive advantage, and lack of resources hinders the growth of the firm [11].

This study links the RBV with the green entrepreneurial behaviour, in which the university provides resources to students to the ambitious entrepreneurs. In this study, “University Green Entrepreneurial Support” has been based on the tendency above.

B. Flow Theory

The Flow Theory (FT) is defined as “the state in which people are so intensely involved in an activity that nothing else seems to matter the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it” [12]. The theory was originally presented as a tool to understand motivation [13].

Students with environmental-related motivation are keener on to try and initiate a new green business [14]. Flow theory served as the foundation for entrepreneurial motivation in this study.

C. Green entrepreneurship and green entrepreneurial behaviour

This concept is created from the mix of entrepreneurial and environmental terms coined by authors such as Blue and Bennett in the early 1990s [15] [16]. Green entrepreneurship is a recent idea that connects sustainable development and enterprise [17].

Entrepreneurship behaviour is defined as “a combination of ideas, capital, and resources, as well as a creative and empowerment component” [18]. According to Awang et al. green entrepreneurs are viewed as disruptive thinkers capable of saving the sociological landscape from environmental threats [19]. Thus, green entrepreneurship serves not only as a type of business anymore but also as a social engagement that strives to protect and conserve the natural environment [20].

Based on previous literature review, there are five hypotheses proposed in this research. We suggest that the five main factors affecting students' green entrepreneurship behaviour, which are university entrepreneurial support, green entrepreneurial intentions, commitment to the environment, entrepreneurial motivation, entrepreneurial education.

D. University entrepreneurial support and green entrepreneurship behaviour

University entrepreneurial support (UES) is crucial in promoting innovation and entrepreneurial activities since UES can specify the environment and enable the talent that will stimulate an increase in new green ideas. This will also be put to practical use by keeping the deal flow going, which will enable more possibilities for university students to participate in venture capital and help green entrepreneurship firms develop [21].

University entrepreneurship programs, particularly experiential-learning programs, were correlated with students' entrepreneurial behaviour, and hands-on experiential programs are a more effective way for educational institutions to change students' entrepreneurial behaviour and encourage campus venture creation [22]. Universities can contribute to promoting green entrepreneurship behavior among students and economic development through active participation. Thus, this study proposed that:

H1: University entrepreneurial support is correlated to green entrepreneurship behaviour

E. Entrepreneurial intention and green entrepreneurship behaviour

Entrepreneurial intention, according to Hmieleski and Corbett, can be characterized as plans to launch a high-growth business [23]. Entrepreneurship intention has become the focus of entrepreneurship study because it is widely seen as an intentional behaviour [24], and ‘entrepreneurial behaviours are the outcome of intention’ [25] [26]

Researchers have previously used intention-based models to understand the entrepreneurial phenomena better and provide insight into why people participate in entrepreneurial behaviour [24]. This is in agreement with Ajzen theory of planned behaviour (TPB), which uses attitudes, perceived behavioural control (PBC), and subjective norms to explain intentions [27].

According to Bae et al., planned behaviour defines intention as “an individual's preparedness to adopt entrepreneurship conduct as a desire to develop a new business” [28]. Therefore, the following hypothesis will be tested:

H2: Green entrepreneurial intention is correlated to green entrepreneurship behaviour

F. Commitment to environment and green entrepreneurship behaviour

According to the researchers, the new generation is more committed to the safety of the ecosystem [29]. Their commitment motivates them to participate in the economy [30]. Individuals committed to the environment are more motivated to work for the environment's best well-being than their self-interest [31]. Thus, we proposed that:

H3: Commitment to the environment is correlated to green entrepreneurial behaviour

G. Entrepreneurial motivation and green entrepreneurship behaviour

Chang and colleagues define entrepreneurial motivation as an individual's effort directed toward the "entrepreneurship" work goal [32]. Farhangmehr, M et al also agreed that motivation entrepreneurship is to gather individual ideas in entrepreneurship which the future entrepreneurs desire and believe in achieving these goals [33]. Entrepreneurs' motivation motivates them to formulate strategies and engage in entrepreneurial activities that contribute to the development of sustainable businesses [34]. Motivation can change a person's behaviour and encourage them to start a new business as a career option [29]. Therefore, the author hypothesized that:

H4: Entrepreneurial motivation is correlated to green entrepreneurship behaviour

H. Entrepreneurial education and green entrepreneurship behaviour

The area of entrepreneurial education is quite popular and has been a growing subject in higher education around the globe. These days, people are increasingly concerned with start-up programs in universities. Furthermore, Academics and researchers both appreciate the potential benefits of entrepreneurial education [35]. Entrepreneurial education programs are thought to be an effective way of providing potential entrepreneurs with the necessary skills and information [36] [37].

An individual can have access to the skills and knowledge required to establish and expand their own company through education [38]. Entrepreneurship education increases students' entrepreneurial behaviour, as evidenced by correlation relationship between program participation and entrepreneurial engagement [39]

H5: Entrepreneurial education is correlated to green entrepreneurial behaviour.

III. METHODOLOGY

A. Data collection

By a quantitative method, an online survey was distributed to the students who had learnt at least 1 subject related to entrepreneurship at FPT University Da Nang. A question-

IV. FINDING

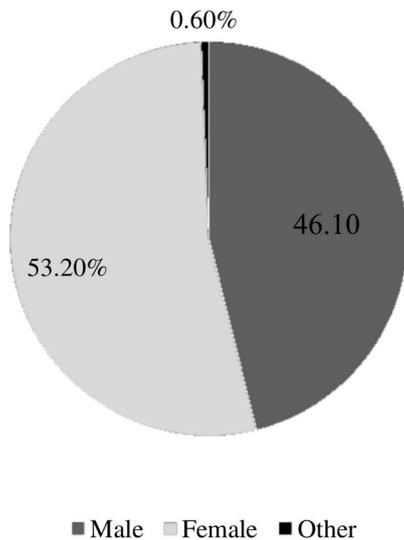


Fig. 1 Gender of Respondents

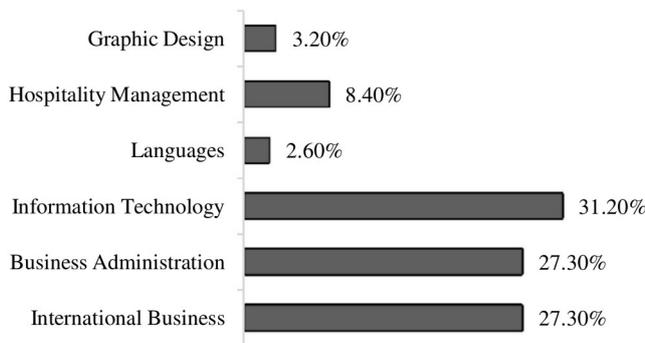


Fig. 2 Major of Respondents

naire survey has two parts, including general information about respondents and five factors affecting Green entrepreneurial behaviour. Additionally, this questionnaire uses a five-point Likert scale that ranges between 1 = “strongly disagree” and 5 = “strongly agree”.

According to Hair and et. al (2014), the minimum sample size to use EFA is 50, and the best-observed ratio is 5:1 [40]. Therefore, the requirement for a minimum sample size is $24 \times 5 = 120$. Overall, 3 respondents were unusable out of a total of 157 collected respondents. Thus, the sample size of 154 respondents was acceptable because there satisfied the above condition.

B. Data analysis

The study uses SPSS to evaluate and discover the most influential factors that impact Green entrepreneurial behaviour. All of the indicators were analysed in this study, even descriptive statistics. Meanwhile, Cronbach Alpha and EFA are used for measuring the scale reliability of independent factors affecting Green entrepreneurial behaviour. Lastly, correlation analysis will help to determine the relations between independent factors and dependent variable.

A. Demographic

The demographic result shows that the percentage of gender is pretty much the same, including 46.1 % males and 53.2% females. There is no difference in gender when they intend to do a start-up or become an entrepreneur. In order to collect accurate samples, the students who are in two groups of last year’s students will be reached. While the first-year students account for 11.7% and the second-year students have the lowest number, at 10.4%. The propositions of the top 3 majors of FPT University Da Nang campus in this survey are 27.3%, 27.3% and 31.2% respectively. Finally, the ratio of subjects has the exact percentages from 20% to 34%. Fig. 1 and Fig. 2 illustrate detailed information on the student’s characteristics.

B. Reliability analysis

Cronbach's alpha values for 6 variables exceed the threshold values, indicating that all 24 items are reliable. From Table 1, Entrepreneurship education (EE) has the highest Cronbach's Alpha rate of 0.918. Green entrepreneurial intentions, University entrepreneurial support, Commitment to environment, Entrepreneurial motivation, and Green Entrepreneurial Behaviour are 0.816; 0.904; 0.861; 0.876, and 0.877, respectively. These variables, therefore, are reliable because all coefficients are greater than 0.70. In addition, the Corrected item-total Correlation index is more than 0.3.

TABLE I
RELIABILITY OF SCALE (CRONBACH ALPHA 0.7)

Factors	Items	Cronbach Alpha
Green entrepreneurial intentions (GEI)	4	0.816
University entrepreneurial support (UES)	4	0.904
Commitment to environment (CE)	4	0.861
Entrepreneurial motivation (EM)	4	0.876
Entrepreneurship education (EE)	4	0.927
Green entrepreneurial behaviour (GEB)	4	0.877

C. EFA analysis

Ximénez (2009) [41] and Hair (2014) [40] stated that any factor loading under 0.5 will be rejected to ensure the quality of the structural model when assessing the EFA. As a result, GEI1 should be removed because of no factor loading.

Thus, this study defines 5 groups of factors, which are presented in Table 2, that influence Green entrepreneurial behavior:

1. *Green entrepreneurial intentions*, GEI is a representative variable for GEI2, GEI3, GEI4.
2. *University entrepreneurial support*, UES1, UES2, UES3, UES4 are represented by variable UES.
3. *Commitment to environment*, CE is a representative variable, including CE1, CE2, CE3, CE4.

4. *Entrepreneurial motivation*, the present variable EM includes EM1, EM2, EM3, EM4.
5. *Entrepreneurship education* includes EE1, EE2, EE3, EE4. The representative variable of this group is EE.

TABLE II
ROTATED COMPONENT MATRIX

	Component				
	1	2	3	4	5
UES2	0.837				
UES 3	0.815				
UES 1	0.772				
UES 4	0.742				
EM 3		0.833			
EM 1		0.814			
EM 4		0.746			
EM 2		0.732			
EE 3			0.799		
EE 2			0.787		
EE 1			0.737		
EE 4			0.666		
CE 3				0.762	
CE 4				0.719	
CE 2				0.649	
CE 1				0.644	
GEI 3					0.871
GEI 4					0.798
GEI 2					0.680

D. Correlation analysis

Table 3 displays the findings of the correlation between the studied variables. University entrepreneurial support (UES) is positively and significantly associated with Green entrepreneurial behaviour (GEB) ($r = .604^{**}$, $\text{sig} \leq 0.05$). Similarly, there is a substantial and positive correlation between entrepreneurial motivation (EM) and green entrepreneurial behaviour (GEB) ($r = .577^{**}$, $\text{sig} \leq 0.05$). Entrepreneurship education (EE) also has a strong positive correlation with Green entrepreneurial behaviour (GEB) ($r = .756^{**}$, $\text{sig} \leq 0.05$). Likewise, Commitment to environment (CE) and Green entrepreneurial intentions (GEI) correlate with Green entrepreneurial behaviour (GEB) respectively ($r = .617^{**}$, $\text{sig} \leq 0.05$) and ($r = .629^{**}$, $\text{sig} \leq 0.05$).

TABLE III
CORRELATIONS TABLE

Variables	UES	EM	EE	CE	GEI	GEB
UES	1					
EM	.335**	1				
EE	.676**	.543**	1			
CE	.541**	.696**	.662**	1		
GEI	.582**	.306**	.570**	.388**	1	
GEB	.604**	.577**	.756**	.617**	.629**	1

** . Correlation is significant at the 0.01 level (2-tailed).

The independent variables, however, are substantially correlated as well because they meet the requirement of sig 0.05.

V. DISCUSSION

The Green entrepreneurial behaviour of university students was chosen as the study's new topic for entrepreneurship education. From previous studies, the factors Green entrepreneurial intentions (GEI), University entrepreneurial support (UES), Commitment to Environment (CE) and Entrepreneurial motivation (EM) are considered a lot in Green entrepreneurial behaviours (GEB). Entrepreneurship education (EE) factor is only an external factor affecting Commitment to Environment (CE) [42]. However, many previous researchers found a positive impact of EE on entrepreneurial behaviour [43-45]. This is considered a potential factor that can affect Green entrepreneurial behaviours. Therefore, this research model has proposed a factor Entrepreneurship education (EE) as a direct factor.

The data are well matched with the proposed original hypotheses. The results of green entrepreneurial intention here is consistent with the works of Yi (2020), with the similar results showed that green entrepreneurial intention and university entrepreneurial support correlated with the degree a person will more likely to engage in green entrepreneurial behaviour [8]. Similarly, Rauch et al. (2015) also confirm that entrepreneurial education and intention are positively related to the entrepreneurial behaviour of students [45]. In terms of the correlation between commitment of environment and green entrepreneurial behaviour, the results of this study match the findings of Hamed et al. (2021) and Ho et al. (2014), where the authors indicate that commitment to the environment is a significant element in building green entrepreneurial behaviour [42,43]. However, there is a conflict in the findings where motivation did not correlate with green entrepreneurial behaviour in the past study of Hameed et al. (2021) [42]. This can be explained where the past findings are concluded in multiple institutions while this study is in only one, which can affect such result. Furthermore, the participants in this study have more opportunities to participate in the workshops, competitions, and project-based learning activities related explicitly to entrepreneurship provided by the school or the local government. In contrast, in

the past study, the student only studied the formal course about entrepreneurship.

VI. CONCLUSION

The purpose of this study is to identify the relations and correlations between 5 important factors on Green entrepreneurial behaviour of students. From that, the educators and schools can base on this research findings to develop their curriculums for green start-ups. The research has synthesized three models of previous authors to develop a proposed research model and two theories, as Resource-Based View and Flow Theory. And 5 factors are collected to develop the proposed research model of Green Entrepreneurial behaviour.

The results from analysis reveal that the dependent variable and the independent variables are positively and strongly correlated. Therefore, all hypotheses are supported in this study. In other words, the educational programs and support from school, with the intention, motivation, commitment with green entrepreneurship have a significant role in develop green entrepreneurial behaviour in students in higher education.

This study has some limitations. The first is affecting factors. The authors just used 5 factors as the predictors of green entrepreneurship behaviour. However, there may be other factors affecting green start-up behaviour. Alternatively, these factors may not directly affect green start-up behaviour but indirectly through an intermediary factor. Therefore, in the future, research papers can develop more influencing factors and exploit the intermediary relationships of these factors to determine the major impact of promoting green start-up behaviour. This leads to the second limitation, where the quantitative research method and the use of the SPSS tool might only help to find the correlations between the 5 important factors on green start-up behaviour. This does not overestimate how meaningful the variables excluded from the model are. Therefore, future research papers might apply linear regression technique to identify what factors has the most influence on the dependent variable and employ other tools such as PLS-Smart (PLS-SEM method) to solve the above problem. On top of that, this study was carried out only among students in FPT University in Danang, Vietnam, which can make the results not be fully generalized in other locations in the world.

Furthermore, although the results in this study do not similar with the findings from the past study, it still provides a strong pillar as a future research direction. Further study is needed to determine the cause-and-effect relationship. Future research direction will be to use regression, which will demonstrate the degree of the independent variable's positive and significant influence on the dependent variable (GEB).

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