

## **Determinants of Translating Entrepreneurial Intention to Action: A Study of Undergraduate Students of the University of Peradeniya, Sri Lanka**

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### **Abstract**

*Entrepreneurs are the wealth creators of an economy, and hence business start-ups are always encouraged. Although it is often suggested that entrepreneurial intentions are strong predictors of entrepreneurial action, all intentions do not necessarily translate into action as there is an “intention-action gap” when nascent entrepreneurs fail to act on their intentions. This study aimed to explain the gap between entrepreneurial intentions and entrepreneurial action and identify the determinants of the intention to action translation by surveying the final year undergraduates from different degree programs at a major public university in Sri Lanka. The research focused on the effects of demographic, psychographic, and environmental factors to explain the intention-action gap. Data were collected using a pre-tested self-administered questionnaire. The questionnaire was circulated online among the entire final year undergraduate student population of the University of Peradeniya. Four hundred and fifty-three undergraduate students (n=453) responded to the survey. Hierarchical OLS regression with the main effect model and an interactions model was used for the data analysis. Results found that of the respondents who had entrepreneurial intentions, 32% had taken some actions towards starting a business. The results also revealed a positive relationship between entrepreneurial intention and action and there were positive effects of gender, perceived competence in entrepreneurial skills, entrepreneurial environment in the faculty, and entrepreneurial education on entrepreneurial actions.*

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*Furthermore, it was found that progressing from entrepreneurial intention to action was more robust for male undergraduates compared to female undergraduates. Therefore, to promote entrepreneurship, introducing entrepreneurship courses, introducing programmes to improve entrepreneurial skills and competencies and promoting an entrepreneurial culture in the Faculties could be recommended.*

**Keywords:** Entrepreneurial intention, Entrepreneurial action, Hierarchical OLS regression, Students

## **Introduction**

Entrepreneurship has been viewed as a crucial factor in sustained economic development and economic growth through employment creation, market spending, knowledge transfer, and innovations (Meyer & Jongh, 2018; Tunio, 2020). Higher education in entrepreneurship is identified as an important tool in aiding countries' social and economic development (Tunio, 2020). Entrepreneurial higher education has been increasing in the Sri Lankan context, which has positively affected entrepreneurial intention among undergraduates (Kumara, 2012). Subsequently, this study has focused on entrepreneurial behaviour among undergraduates. Entrepreneurship is suggested to be an intentional activity (Kautonen et al., 2015; Shirokova et al., 2015; Bogatyreva et al., 2019). The emergence of new business ventures is a key outcome of entrepreneurship (Shirokova et al., 2015). Some studies suggest that forming an intention to start a business is a part of the process of eventually creating an organization (Liñán & Chen, 2009; Kolvereid & Moen, 1997; Kautonen et al., 2015).

A person's intention is assumed to represent the motivational factors that influence behaviour (Ajzen, 1991). Entrepreneurial intentions have been further elaborated as the readiness and commitment to start a new business, and previous studies identify intentions to be key predictors of entrepreneurial action (Krueger, 1993; Shirokova et al., 2015; Meoli et al., 2019). The Theory of Planned Behaviour by Ajzen (1991) recognized this association between intention and behaviour, and the theory explains that intention is a significant predictor of behaviour (Kautonen et al., 2013). However, not all entrepreneurial intentions turn into subsequent entrepreneurial behaviour (Shirokova et al., 2015; Bogatyreva et al., 2019; Meoli et al., 2019). This creates a sizable 'intention-action gap' in entrepreneurship, and this is explained by those who

have the entrepreneurial intention but fail to act on it (Adam & Fayolle, 2015; Kautonen et al., 2015; Shirokova et al., 2015). The formation of a new business venture can be challenging due to external and internal limiting factors (Weiss et al., 2019). It is also suggested that the translation of entrepreneurial intention into entrepreneurial behaviour can be attributed to a range of individual and situational factors (Kautonen et al., 2015; Bogatyreva et al., 2019; Meoli et al., 2019).

Although the translation of intention into subsequent behaviour has been abundantly studied in many research domains, it is much less studied with respect to entrepreneurship (Shirokova et al., 2015; Kautonen et al., 2013). This translation is critical in economic growth through new venture creation. There is a dearth of research focusing on the relationship between entrepreneurial intention and action in the Sri Lankan context. Even though a considerable number of studies in Sri Lanka have focused on entrepreneurial intention (Nishantha, 2009; Thrikawala, 2011; Kumari et al., 2019; Gunawardane & Weerasinghe, 2021), the translation of intention into entrepreneurial behaviour has not been a research focus. In considering entrepreneurship studies, the context has been identified as an important factor that explains entrepreneurial action (Weiss et al., 2019). Therefore, it is crucial to study the relationship between entrepreneurial intention and behaviour affected by potential individual and situational factors in the Sri Lankan context.

Entrepreneurship becomes attractive to those who are about to make their career choice and it has been suggested that the majority intends to pursue entrepreneurship while they are relatively young (Martinez et al., 2007; Shirokova et al., 2015). Therefore, it was identified that the intention-action gap is better suited to be studied concerning young adults. Further, since higher educational institutes play an active role in molding young adults professionally as well as personality-wise, it was identified that a study carried out in a University context would yield useful policy implications. Therefore, the objectives of this research are to assess if entrepreneurial intention leads to entrepreneurial action and to identify the factors determining the translation of entrepreneurial intention to entrepreneurial action of undergraduate students in a university context.

## Literature Review

### *Progression from Entrepreneurial Intention to Entrepreneurial Action*

Entrepreneurial intentions are defined as the commitment to start a new business (Krueger, 1993) while entrepreneurial action is defined as the discovery, evaluation, and exploitation of an opportunity (Shane & Venkataraman, 2000). The stream of literature which explains new venture creation through intentionality is conceptualized using the Theory of planned behaviour by Ajzen (1991). The theory of Planned Behaviour proposes that intention is a significant predictor of behaviour. This theory has been applied in the entrepreneurial context to predict entrepreneurial intention (Kautonen et al., 2013). However, the literature recommends that in the context of entrepreneurship, behaviour is poorly explained by intentions alone (Meoli et al., 2019). Entrepreneurial intentions are said to explain only a 30% or less of the variance in subsequent entrepreneurial behaviour (Adam & Fayolle, 2015; Bogatyreva et al., 2019; Meoli et al., 2019).

Creating new business ventures has been identified as a primary result of entrepreneurship (Shirokova et al., 2015; Bogatyreva et al., 2019). It is often considered that venture creation is not a single activity. Instead, it is a process consisting of several activities leading to the eventual creation of new business ventures (Kautonen et al., 2015; Shirokova et al., 2015). Literature also presents entrepreneurship as an intentional activity (Kautonen et al., 2013; Shirokova et al., 2015; Bogatyreva et al., 2019; Meoli et al., 2019). However, it is empirically identified that not all entrepreneurial intentions translate into action, thus creating an “intention-action gap” (Adam & Fayolle, 2015; Shirokova et al., 2015; Bogatyreva et al., 2019). From the past studies, it is evident that entrepreneurial intention displays a positive relationship with entrepreneurial action, thereby forming the first hypothesis of this study.

*Hypothesis 1: Entrepreneurial intention is positively related to entrepreneurial action*

Those who have entrepreneurial intentions are said to take calculated risks, obtain required resources and ultimately create new business ventures (Karabulut, 2016). According to Kautonen et al. (2015), the robustness of the Theory of Planned Behaviour in explaining entrepreneurial behaviour has been recognized. Apart from entrepreneurial intentions, perceived behavioural controls have been recognized as a predictor of entrepreneurial action (Kautonen et al., 2015). It is said that even though the intention is a sufficient predictor of action, perceived behavioural controls can also have an independent

effect on entrepreneurial action. This is especially valid for behaviours such as entrepreneurship, where an individual will not have complete volitional control over the action (Ajzen, 1991; Kautonen et al., 2015). This points to the relationship between an individual's perceived behavioural controls and entrepreneurial actions. Hence, the second hypothesis tested in this study is as follows.

*Hypothesis 2: Perceived behavioural control is positively related to entrepreneurial actions.*

According to Weiss et al. (2019), the formation of a novel business venture can be challenging due to external and internal limiting factors. It is also suggested that the translation of entrepreneurial intention into entrepreneurial behaviour can be attributed to a range of individual and situational factors (Kautonen et al., 2015; Bogatyreva et al., 2019; Meoli et al., 2019). These factors include demographic characteristics, entrepreneurship education, physiological factors, and environmental factors. The following sections address each of these aspects.

### ***Demographic Characteristics***

***Gender:*** Literature has continued to showcase that women are less likely to engage in entrepreneurial actions than men (de Bruin et al., 2007). The moderating effect of gender on the translation of entrepreneurial intention to action has been studied by Shinnar et al. (2018), who revealed that the effect of entrepreneurial intention on action is stronger for men compared to women. It is also identified that when men and women have the same level of entrepreneurial intentions, men are more likely to act on their intentions (Shinnar et al., 2018). A study performed on university undergraduates by Shirokova et al. (2015) also revealed similar results where it was found that the positive relationship between entrepreneurial intention and action is stronger for male undergraduates. It is also suggested that even if females develop entrepreneurial intentions, it is more likely to be disregarded eventually (Shirokova et al., 2015). Studies on Sri Lankan undergraduates have also revealed similar results (Nishantha, 2009; Thrikawala, 2011; Kumari et al., 2019). Gender of an individual therefore displays an impact on the translation of entrepreneurial intention to action leading to the third hypothesis of this study.

*Hypothesis 3: The positive relationship between entrepreneurial intentions and entrepreneurial action will be stronger for male undergraduates than female undergraduates*

**Family Entrepreneurial Background:** Family entrepreneurial background of an individual has been identified as an impactful aspect of translating one's entrepreneurial intention to action. A student's parents being occupied in business ventures or self-employment have been identified as having an entrepreneurial background in the family (Yang, 2013; Shirokova et al., 2015). The benefits of such a background for an undergraduate's entrepreneurship roots from the comparative easiness of assessing social capital through entrepreneurial parents' connections and social networks (Laspita et al., 2012). Past studies have often indicated that parental entrepreneurial status can facilitate entrepreneurial intention among children (Jodl et al., 2001). Moreover, it is identified that the family entrepreneurial background plays an important role in the development of children's entrepreneurial intention (Laspita et al., 2012). In a study on university undergraduates by Shirokova et al. (2015), the moderating effect of family entrepreneurial background on the translation of entrepreneurial intention to action was identified. Thrikawala (2011) has identified a positive effect of parental entrepreneurial experience on undergraduate entrepreneurship among Sri Lankan undergraduates. Family background and experience in entrepreneurship have thereby shown an impact on entrepreneurial action in global and Sri Lankan contexts, developing the fourth hypothesis of the study.

*Hypothesis 4: The positive relationship between entrepreneurial intentions and entrepreneurial action will be stronger for undergraduates with a family entrepreneurial background than for undergraduates without such background.*

**Entrepreneurship Education:** Entrepreneurship education of students has been identified to influence entrepreneurial intentions and their subsequent translation to action (Kolvereid & Moen, 1997). Literature also suggests that education in entrepreneurship enables students to accumulate the resources required for entrepreneurial action (Solesvik et al., 2014). Solesvik et al. (2014) have also mentioned that the provision of entrepreneurial education in universities can promote the entrepreneurial intentions of undergraduates. Bae et al. (2014) have also identified the positive effect of entrepreneurial education on entrepreneurial action. A study conducted on Ugandan university students by Byabashaija & Katono (2011) has identified that entrepreneurship courses influence the perception of entrepreneurship as a desirable and feasible career choice. It has also been found that entrepreneurial education boosts the confidence among undergraduates in entrepreneurial performance (Byabashaija & Katono, 2011). Similar arguments have been made by Liu et al. (2019) based on Chinese

college students. In the Sri Lankan context, similar connections were also found among undergraduates (Gunawardane & Weerasinghe, 2021). The impact of entrepreneurial education on translating entrepreneurial intentions to action is thereby tested in the fifth hypothesis of the study.

*Hypothesis 5: The positive relationship between entrepreneurial intentions and entrepreneurial action will be stronger for undergraduates with entrepreneurial education than for undergraduates without entrepreneurial education.*

### ***Psychological Characteristics***

***Personality Traits:*** Previous studies have shown that personality traits such as the need for achievement, risk tolerance, internal locus of control, and entrepreneurial alertness lead an individual towards entrepreneurial intention development (Karabulut, 2016). Barton et al. (2018) have also shown that differences among personalities can affect how individuals become entrepreneurs. Internal Locus of Control has shown a positive reaction to entrepreneurial action among undergraduates (Shirokova et al., 2015). An individual that perceives the ability to control their life is identified to have an internal locus of control (Karabulut, 2016). Internal locus of control is identified as a psychological trait that can explain entrepreneurial behaviour (Ajzen, 1991). Previous studies suggest that people who display an internal locus of control are more likely to have an entrepreneurial intention that translates to starting business ventures (Karabulut, 2016). Higher levels of entrepreneurial intentions have been observed among undergraduates with a higher level of internal locus of control (Kristiansen & Indarti, 2004). Similar results have been identified among Sri Lankan undergraduates by Nishantha (2009). The impact of internal locus of control in the translation of entrepreneurial intentions to action is prominent in past literature leading to the sixth hypothesis of the study.

*Hypothesis 6: The positive relationship between entrepreneurial intentions and entrepreneurial action will be stronger for undergraduates with a higher internal locus of control.*

***Perceived Competence in Entrepreneurial Skills:*** Literature suggests that the perceived level of competence in performing skills related to entrepreneurship affects the emergence of entrepreneurial intention among academics (Rasmussen et al., 2010; Fernández-Pérez et al., 2015; Shirokova et al., 2015). Shirokova et al. (2015) have found out that the perceived competence in entrepreneurial skills positively affects entrepreneurial action as well. It has also been suggested by Liñán & Chen (2009) that the self-efficacy in entrepreneurial

skills is a strong predictor of entrepreneurial intention and action. The positive relationship between entrepreneurial self-efficacy and entrepreneurial intentions has been discussed by Saeed et al. (2013). Studies conducted on Sri Lankan undergraduates by Weerakoon & Gunatissa (2014) have also shown that when undergraduates perceive higher entrepreneurial self-efficacy, they are more likely to develop entrepreneurial intentions. Therefore, the seventh hypothesis of the study is developed to investigate the impact of perceived behavioral control in translating entrepreneurial intention to action.

*Hypothesis 7: The positive relationship between entrepreneurial intentions and entrepreneurial action will be stronger for undergraduates with higher perceived competency in entrepreneurial skills.*

### ***Environmental Characteristics***

***Peer Entrepreneurial Background:*** The presence of entrepreneurial peers in an educational environment influences the formation of entrepreneurial intentions, according to Falck et al. (2010). Studies such as Kacperczyk (2013) and Bellò et al. (2017) suggest that the entrepreneurial intentions among undergraduates are affected by their peers. A positive relationship between having close friends who engage in businesses and entrepreneurial intentions is identified by Davidsson & Honig (2003). Furthermore, the past entrepreneurial behaviours of university peers have acted as a driver of entrepreneurship among university students (Kacperczyk, 2013). In the Sri Lankan context, the importance of the peer effect on career aspirations among undergraduates is identified by Madurangi et al. (2019). Since past studies point to the relationship between peer entrepreneurial background and one's formation of entrepreneurial intentions, the following hypothesis is considered in the study.

*Hypothesis 8: The positive relationship between entrepreneurial intentions and entrepreneurial action will be stronger for undergraduates with peer entrepreneurial effect than for undergraduates without such effect.*

***Uncertainty Avoidance:*** Literature has identified that some cultures encourage entrepreneurship more than other cultures (Bogatyreva et al., 2019). The relationship between entrepreneurial intention and action is identified to be stronger among cultures that are conducive to entrepreneurship (Newbery et al., 2018). Societal uncertainty avoidance has been specifically identified to affect the relationship between entrepreneurial intention and action among undergraduates (Shirokova et al., 2015). Hofstede (1991) understood uncertainty avoidance of society as “the extent to which the members of a



culture feel threatened by uncertain or unknown situations”. Literature suggests that cultures with low levels of uncertainty avoidance are more inclined to entrepreneurship (Bogatyreva et al., 2019). Similar arguments have been made by Autio et al. (2013) suggesting that societies with low levels of uncertainty avoidance are more favourable toward entrepreneurship. This aspect forms the ninth hypothesis of the study.

*Hypothesis 9: The positive relationship between entrepreneurial intentions and entrepreneurial action will be weaker for undergraduates with high levels of societal uncertainty avoidance.*

***Entrepreneurial Background in the Education Institute:*** Previous studies have suggested that the place of education and its values, norms, and context can affect the entrepreneurial intention of its students (Shirokova et al., 2015). Initiation of business ventures among students has been identified to be influenced by the support extended by universities towards entrepreneurship (Saeed et al., 2013). According to this study, universities can provide support for entrepreneurship by fostering a supportive environment and offering resources. Such support can equip undergraduates with the confidence to initiate their business ventures (Kraaijenbrink et al., 2010). This study also stressed that the student's perception of university support is important for their entrepreneurial initiations. Shirokova et al. (2015) have identified that the university entrepreneurial environment has a moderating effect on the translation of entrepreneurial intention to action among undergraduates. According to the administrative structure of the Sri Lankan university system in Sri Lanka, faculties in a university have an independent and unique educational environment. Therefore, the entrepreneurial environment in different faculties could be different. The impact of these unique backgrounds in faculties could lead to varied translations of entrepreneurial intentions of their students to action. This is identified in the tenth hypothesis of the study.

*Hypothesis 10: The positive relationship between entrepreneurial intentions and entrepreneurial action will be stronger for undergraduates with a better entrepreneurial environment in the faculty.*

### ***Conceptual Framework***

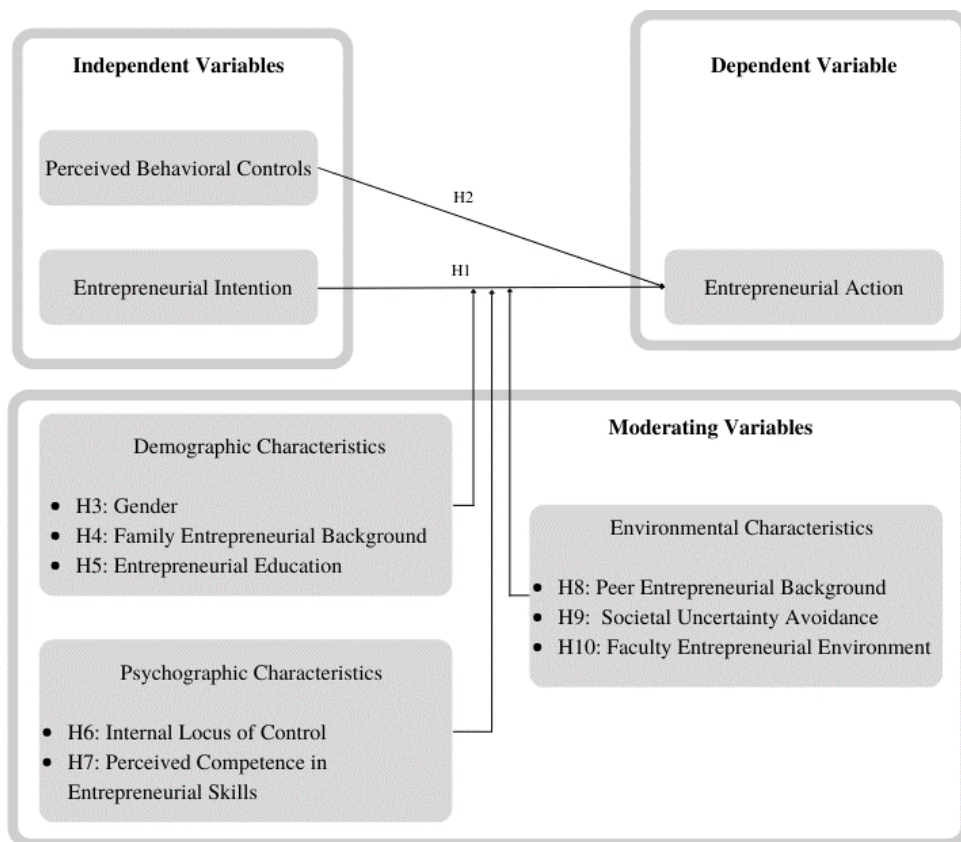
**Independent Constructs:** Two constructs have been identified through the literature review as entrepreneurial intention and perceived behavioural controls.

**Dependent Constructs:** Entrepreneurial action has been included as the dependent variable for the study. The conceptual framework also includes eight moderating variables categorized into three demographic characteristics, two psychographic characteristics, and three environmental characteristics.

**Moderating Constructs:** The literature review identified age, gender, entrepreneurial education, and family entrepreneurial background as demographic characteristics that could be moderating variables in the current study. However, age was excluded from the conceptual framework based on the cross-sectional approach of the research. Furthermore, a considerable variance of age is not expected within the sample because all the respondents belong to the final year batch of undergraduates at the University of Peradeniya. Hence, gender, entrepreneurial education, and family entrepreneurial background are included in the conceptual framework as three moderating variables.

Through the review of literature, personality traits and the perceived competence in entrepreneurial skills were identified as moderating variables under the category of psychographic characteristics. In addition, internal locus of control has been identified to affect undergraduate entrepreneurial intention and action from the discussed personality traits. Therefore, perceived competence in entrepreneurial skills and internal locus of control have been used in the conceptual framework as psychographic characteristics.

Environmental characteristics such as peer entrepreneurial background, entrepreneurial background in the education institute, and societal uncertainty avoidance were identified to affect undergraduate entrepreneurial action. The following conceptual framework also presents the study's alternative hypotheses as discussed above.



**Figure 1: Conceptual framework for the study**

## Methodology

### *Research Design*

This research takes a deductive approach. Primary data were collected through a self-administered online questionnaire and the time horizon is cross-sectional. Most past research that focused on the relationship between entrepreneurial intention and action has opted to measure intention and action separately with a substantial time gap (Kautonen et al., 2013; Weiss et al., 2019). However, when such a time gap is present between the measurements, it is more likely that intention may change during the time gap due to external events (Shirokova et al., 2015). Therefore, this study has adopted a cross-sectional approach in collecting data.

### ***Population and sample***

Prior studies have pointed toward the importance of studying entrepreneurship among young groups about to make career choices (Martinez et al., 2007; Shirokova et al., 2015). In this regard, the study was conducted at the University of Peradeniya, Sri Lanka. Higher education in entrepreneurship has been increasing in the Sri Lankan context (Kumara, 2012) providing a strong context for this study. The University of Peradeniya includes nine faculties specializing in various academic fields. Final year undergraduates from all the faculties were included in the population of the study. These undergraduates represented a young group about to make the transition from undergraduate education to a career path. A pre-tested online questionnaire survey was distributed to the total population of the final year 2,688 undergraduate students of the University and the respondents were selected as the sample for the study.

### ***Data Collection Instrument***

The questionnaire was prepared using established scales adapted from previous literature. It was first prepared in English and later translated to the two local languages Sinhalese and Tamil by bilingual speakers. Translated questionnaires were back-translated to English to ensure accuracy. The questionnaire was pre-tested and was further improved with the feedback received in order to improve understandability.

The questionnaire consisted of four sections. The first section comprised questions on the demographic information and peers and the family entrepreneurial background of the respondent. The second section included Likert scale questions with multiple items which measured entrepreneurial intention, entrepreneurial environment in the faculty, societal uncertainty avoidance, internal locus of control, and perceived behavioural controls. The third and fourth sections focused on measuring the respondent's perceived level of entrepreneurial skills and entrepreneurial actions using a semantic differential scale and a "select all that is relevant" type question respectively.

### ***Construct Measurement***

The dependent variable of the study, entrepreneurial action is the turning of entrepreneurial intentions into actions and steps taken towards new venture creation and selling products or services (Shirokova et al., 2015). This is measured in this research through an index capturing ten start-up activities adopted from the Global Entrepreneurship Monitor and Panel Study of Entrepreneurial Dynamics. This has been used to measure entrepreneurial action

in studies such as Shirokova et al. (2015), and Neneh (2019). The activities in the entrepreneurial action scale include, *“Discussed product or business idea with potential customers”*, *“Collected information about markets or competitors”*, *“Written a business plan”*, *“Started product/service development”*, *“Started marketing or promotion efforts”*, *“Purchased material, equipment or machinery for the business”*, *“Attempted to obtain external funding”*, *“Applied for a patent, copyright or trademark”*, *“Registered the company”* and *“Sold product or service”*. The index for the variable was calculated as a summative index of the number of activities engaged by the undergraduates and divided by the overall number of activities (10). This provided a scale from zero to one, where zero indicated none of the activities were undertaken and one where all the activities were undertaken. Equal weights were used for all the activities when calculating the summative index, which is justified by the internal consistency of the items.

Entrepreneurial intention and perceived behavioural controls (PBC) were independent variables considered in the study. The entrepreneurial intention was operationalized using a 5-point Likert scale with six items. The scale was adopted from Liñán & Chen (2009) which included six statements as, *“I am ready to do anything to be an entrepreneur”*, *“My professional goal is to become an entrepreneur”*, *“I will make every effort to start and run my own firm”*, *“I am determined to create a firm in the future”*, *“I have very seriously thought of starting a firm”* and *“I have the strong intention to start a firm someday”*.

For measuring PBC, a scale adopted by Kautonen et al. (2013) was used. The scale is a revised version of an original scale developed by Kolvereid (1996). The scale consisted of two items, *“For me, starting my own business would be (very easy-very difficult)”* and *“If I wanted to, I could easily pursue a career as a business owner (strongly agree-strongly disagree)”*.

Gender was measured as a dummy variable which was coded 1 for males and 0 for females. The family entrepreneurial background of the respondents was measured in a dichotomous question. If at least one parent has owned a business or been self-employed, the responses were coded one and zero if none of the parents owned a business or had been self-employed. The peer entrepreneurial background is a dummy variable coded one if the respondent had peers who were engaged in starting or running a business, and zero if the respondent did not have such peers.

The perceived competence in entrepreneurial skills of the respondent was measured using a semantic differential scale from one to seven, (1= “not confident”, 7= “completely confident”). The scale items were adopted from Kickul et al. (2009) which included items “*Creating a new business idea*”, “*Identifying new business opportunities*”, “*Creating new products or services*”, “*Planning a new business*”, “*Writing a formal business plan*”, “*Raise money to start a business*” and “*Managing a business*”.

The internal locus of control was operationalized using a Likert scale developed by Levenson (1981). These included, “*When I make plans, I am almost certain to make them work*”, “*I can pretty much determine what will happen in my life*”, “*I am usually able to protect my personal interests*”, “*When I get what I want, it’s usually because I worked hard for it*” and “*My life is determined by my own actions*”.

The entrepreneurial environment of the Faculty was measured using a 5-point Likert scale with items adapted from Shirokova et al. (2015) designed to measure the University's entrepreneurial background. Considering the Faculty-wise organization of the study site i.e. the University of Peradeniya selected for this research, the scale items were adjusted to measure the entrepreneurial environment at each faculty by replacing the term “University” with “Faculty”. The revised scale items were, “*The atmosphere at my Faculty inspires me to develop ideas for new businesses*”, “*There is a favorable climate for becoming an entrepreneur at my Faculty*”, and “*At my Faculty students are encouraged to engage in entrepreneurial activities*”.

A 5-point Likert scale was used in operationalizing the construct of societal uncertainty avoidance. The items for the scale were adopted from Shirokova et al. (2015) which included, “*In my Society, orderliness and consistency are essential, even at the expense of experimentation and innovation*”, “*In my society, most people lead highly structured lives with few unexpected events*” and “*In my society, societal requirements and instructions are spelled out in detail so citizens know what they are expected to do*”.

### ***Data Analysis***

Measurement of Model Appropriateness: The data analysis process included coding, data entry, data cleaning, and data analysis. The scales used for measuring constructs using several scale items were tested for the internal consistency using the Cronbach's alpha test. Construct validities were tested for convergent and discriminant validities. The convergent validity of the scales used in this study was tested using the composite reliability indices and Cronbach's alpha. To test for the discriminant validity, average variance extracted (AVE) statistics were calculated. The scales show discriminant validity if the square root of the AVE was larger than the coefficients between the composite constructs (Fornell & Larcker, 1981). There is a possibility of common method variance bias due to using a self-administered questionnaire to measure all the constructs. This was tested using Harman's statistical test. If one general factor accounts for the majority (more than 50%) of the variance then the result is interpreted to indicate the presence of the common method variance (Podsakoff et al., 2003).

### ***Hypotheses Testing:***

Hypotheses were tested using hierarchical OLS regression models. The first model of the hierarchical OLS regression tested the main effects of entrepreneurial intention and PBC on Entrepreneurial Action (Hypotheses 1 and 2). The second model included interaction terms between the moderating variables and entrepreneurial intentions to test the hypotheses 3 to 10. Both the models used mean-centered variables for entrepreneurial intentions and PBC. Possible heteroskedasticity in the hierarchical OLS regression and potential correlated errors across observations that result from the non-independence of observations collected from the same Faculty were controlled by applying heteroskedasticity-robust standard errors adjusted for Faculty clusters.

## **Results and Discussion**

### ***Profile of the Sample***

There were 453 responses from final year undergraduate students of the University of Peradeniya with a response rate of 16.85%. However, the sample was reduced to 363 responses after data cleaning. In the cleaning process, inconsistent responses were removed. The cleaned sample had a majority of females (70.5%) with a 29.5% representation from males. Table 1 displays the

faculty-wise distribution of the sample. It also displays the gender distribution of the sample among the nine faculties.

**Table 1: Sample Distribution by Faculty and Gender**

Faculty	Males	Females	Total
Faculty of Agriculture	36	64	100
Faculty of Allied Health Sciences	02	32	34
Faculty of Arts	06	49	55
Faculty of Dental Sciences	06	06	12
Faculty of Engineering	14	03	17
Faculty of Management	05	21	26
Faculty of Medicine	12	20	32
Faculty of Science	22	49	71
Faculty of Veterinary Medicine and Animal Science	04	12	16
Total	107	256	363

The entrepreneurial intention was measured in a 5-point Likert scale item which measured the level of agreement to the items in the scale in which strongly disagreed was scored 1 and strongly agreed scored 5. Therefore, when considering those who had a score of 4 or above as those who had an entrepreneurial intention, 28.3% of the sample had an entrepreneurial intention. Out of this, 68% have taken at least one step in the entrepreneurial action list, which comprises ten activities from zero actions to finally making a sale. The gender-wise distribution of the entrepreneurial action and intention is presented in Tables 2 and 3, respectively. Interestingly, females comprise a large percentage of those who have taken entrepreneurial actions as well as among those who fail to take entrepreneurial actions. Similarly among those who have an entrepreneurial intention and those who do not have entrepreneurial intention females are the majority as well as those who do not have an intention.

**Table 2: Percentage Distribution of Entrepreneurial Action by Gender**

	Entrepreneurial Action <sup>1</sup>	No Entrepreneurial Action <sup>2</sup>
Male	35.1%	22.7%
Female	64.9%	77.3%



Total	100%	100%
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<sup>1</sup> Those who have taken at least one step in the entrepreneurial action scale. <sup>2</sup> Those who have taken zero steps in the entrepreneurial action scale.

**Table 3: Percentage Distribution of Entrepreneurial Intention by Gender**

	Entrepreneurial Intention <sup>1</sup>	No Entrepreneurial Intention <sup>2</sup>
Male	49.4%	23.2%
Female	50.6%	76.8%
Total	100%	100%

<sup>1</sup> Those who have scored more than 4 on the entrepreneurial intention scale. <sup>2</sup> Those who have scored less than 4 on the entrepreneurial intention scale.

Sixty-four percent of the sample did not come from a family with entrepreneurial backgrounds as they indicated that neither of their parents had owned a business or been self-employed. The peer entrepreneurial background was quite the opposite, where the majority (71.5%) had peers who owned or ran a business.

Entrepreneurial education was measured as a dummy variable where respondents scored 1 if they had followed a credited entrepreneurial course in their degree program. Only 34% had taken an entrepreneurial course for credit in their degree program. The faculty-wise distribution of entrepreneurial education is shown in table 4.

**Table 4: Sample Distribution by Entrepreneurial Education and Faculty**

Faculty	Students With Entrepreneurial Education (N)	Students Without Entrepreneurial Education (N)
Faculty of Agriculture	76	23
Faculty of Allied Health Sciences	02	32
Faculty of Arts	03	53
Faculty of Dental Sciences	00	12
Faculty of Engineering	01	16
Faculty of Management	24	02
Faculty of Medicine	02	30
Faculty of Science	15	56

Faculty of Veterinary Medicine and Animal Science	04	12
Total	127	236

Table 5 refers to the descriptive statistics of variables. The dependent variable, entrepreneurial action had a mean of 0.1523 (minimum value = 0, maximum value = 10). The two independent variables of entrepreneurial intentions and perceived behavioural control had mean values of 3.1602 and 2.8402, respectively, where the minimum value for both variables was one with a maximum value of five. The frequency percentages of the dummy variables are presented in table 6.

**Table 5: Descriptive Statistics**

Variables	Mean	SD	Median
Entrepreneurial Action	0.1523	0.2005	0.1000
Entrepreneurial Intention	3.1602	0.9543	3
Perceived Behavioural Controls	2.8402	0.7007	3
Internal Locus of Control	3.9193	0.5405	4
Perceived competence in Entrepreneurial Skills	3.7068	1.4553	3.8571
Faculty Entrepreneurial Background	3.3298	0.8514	3.3334
Societal Uncertainty Avoidance	3.6236	0.5485	3.6000

*N* = 363

**Table 6: Frequency Percentages of Dummy Variables**

Variables	Frequency percentage	
	1	0
Gender	29.5% <sup>1</sup>	70.5%
Entrepreneurial education	27% <sup>2</sup>	73%
Peer entrepreneurial background	71.5% <sup>3</sup>	28.5%

<sup>1</sup> Males are denoted as 1, females as 0 <sup>2</sup> Having entrepreneurial education is denoted as 1, otherwise as 0 <sup>3</sup> Having peers who run/own businesses is denoted as 1, otherwise as 0.

(*N* = 363)

***Scale Reliability and Validity Tests***

The Cronbach's alpha test was used to measure the internal consistency for variables which were measured using scales with multiple items. These variables included entrepreneurial action, entrepreneurial, perceived behavioural controls, internal locus of control, perceived competence in entrepreneurial skills, faculty entrepreneurial background, and societal uncertainty avoidance. All the scales had alpha values above the cut-off level of 0.7 (table 7) (Cortina, 1993; Bland & Altman, 1997). This indicates that the scales used to measure the above variables had sufficient internal consistency between the items.

Convergent validity of the scales with multiple constructs was tested using composite reliability indices (CR) and Cronbach's alpha. The convergent reliability of the scales was satisfactory as all scales had values above the threshold level of 0.7 for both the tests (table 7).

The average variance extracted (AVE) was measured for composite scales to measure the discriminant validity. Discriminant validity is suggested to be achieved if the square root of the AVE is larger than the correlation coefficients of the composite constructs (Fornell & Larcker, 1981). The seven scales with multiple items achieved this, thus concluding that the discriminant validity is achieved in the scales used in the study.

**Table 7: Scale Measurements**

<b>Variables</b>	<b>Cronbach's Alpha</b>	<b>CR</b>	<b>AVE</b>
Entrepreneurial Action	0.7723	0.894 3	0.7621
Entrepreneurial Intention	0.9204	0.938 4	0.7181
Perceived Behavioural Controls	0.7410	0.886 2	0.7957
Internal Locus of Control	0.7622	0.841 1	0.5156
Perceived competence in Entrepreneurial Skills	0.9512	0.960 0	0.7748
Faculty Entrepreneurial Background	0.8723	0.921 5	0.7965
Societal Uncertainty Avoidance	0.7835	0.917 6	0.7324

*N*= 363

Harman's single factor statistical test was conducted to test for the possibility of common method bias in the study. The single factor explained 30.949% of the total variance. This indicates that there is no one general factor that accounts for

the majority of the variance, thus allowing the conclusion that common method bias is unlikely to be an issue for this study (Podsakoff et al., 2003).

### ***Regression Results***

A hierarchical OLS regression was used to test for the hypotheses presented with the study's conceptual framework. The regression was run in two models, the first model to test for main effects and the second model with interactions. The main effect regression results of both models are presented in table 9 while table 10 presents the interaction effects of moderating variables with entrepreneurial intention of the second model.

The regression resulted in significant ( $P < 0.01$ ) F values in both models. The R squared value for the first model was 0.248 in the first model, which increased up to 0.288 in the second model with the inclusion of interaction terms. Multicollinearity was tested in the main effect regression model through variance inflation factor (VIF). The average VIF was 1.22, with a maximum of 1.50. These are well below the stipulated level of VIF (4), and hence do not indicate an issue of multicollinearity in the study. Possible heteroskedasticity in the hierarchical OLS regression and potential correlated errors across observations that result from the non-independence of observations collected from the same Faculty were controlled by applying heteroskedasticity-robust standard errors adjusted for Faculty clusters. Normality of the distribution was tested using the Shapiro-Wilk test and residual plots.

**Table 9: Regression Analysis Results**

Variables	Dependent Variable: Entrepreneurial Action	
	Model 1	Model 2
<b>Main Effects</b>	$\beta$	$\beta$
Entrepreneurial Intention	0.030**	-0.159
Perceived Behavioural Controls	-0.005	-0.008
Gender	0.060*	0.047*
Family Entrepreneurial Background	0.020	0.024
Entrepreneurial Education	0.085**	0.085**
Internal Locus of Control	0.012	0.010
Perceived Competence in Entrepreneurial Skills	0.033**	0.031**
Peer Entrepreneurial Background	0.017	0.018

Faculty Entrepreneurial Background	0.016	0.023*
Societal Uncertainty Avoidance	omitted	omitted
<b>Constant</b>	-.133	-.163
F	12.93**	8.75**
R <sup>2</sup>	0.248	0.288
$\Delta R^2$		0.040

*N* = 363 \*\**P* < 0.01 \**P* < 0.05

**Main effects:** The first hypothesis of the study was that entrepreneurial intention is positively related to entrepreneurial action. This was tested through the first model of the hierarchical OLS regression. This hypothesis was supported through the regression analysis with a beta coefficient of 0.030 and a significance level below 0.01. The positive relationship identified between entrepreneurial intention and action is corresponding to the theory of planned behaviour (Ajzen, 1991) which suggests intention as a predictor of behaviour. The positive and significant relationship between entrepreneurial action and intention is well supported by previous studies such as Kautonen et al. (2013), Shirokova et al. (2015), and Bogatyreva et al. (2019).

The correlation coefficient between the entrepreneurial intention and action was 0.3267 which indicates that a 10.67% variance in entrepreneurial actions can be explained by the main effect on entrepreneurial intention. This indicates the possibility of moderators between entrepreneurial intention and action.

The perceived competence in entrepreneurial skills ( $\beta = 0.033$ ;  $P < 0.01$ ), entrepreneurial education ( $\beta = 0.085$ ;  $P < 0.01$ ) and gender ( $\beta = 0.060$ ;  $P < 0.05$ ) were found to have positive main effects with respect to entrepreneurial action.

The second hypothesis of perceived behavioural controls being positively related to undergraduate entrepreneurial action found no support through the regression analysis. Kautonen et al. (2015) has recognized perceived behavioural controls as a predictor of entrepreneurial action which contradicts this finding.

Apart from the hypothesized relationships, perceived competence in entrepreneurial skills, entrepreneurial education, and gender displayed positive main effects on entrepreneurial action. Furthermore, the main effect of the faculty entrepreneurial environment became significant ( $\beta = 0.023$ ;  $P < 0.05$ ) with the inclusion of interaction effects. This result suggests that the undergraduates that perceive a positive faculty environment towards entrepreneurship are more likely to engage in entrepreneurial action. The positive relationship between a favourable university entrepreneurial environment and entrepreneurial action is

supported by studies such as Shirokova et al. (2015). The interaction between societal uncertainty avoidance and the entrepreneurial intention was omitted by the regression to avoid multicollinearity.

**Moderating effects:** The moderating effects of the eight hypothesized (H3-H10) moderators were tested in the second model of hierarchical OLS regression. Two models were performed for each moderating variable with the first model including the independent variables and the moderating variable. Next, the interaction term between the entrepreneurial intention and the moderating variable was added to the regression model and the changes in the  $R^2$  values were observed.

**Table 10: Regression Results- Interaction Effects**

Moderating Variable (interaction with entrepreneurial intention)	Without the Interaction Term		With the Interaction Term		
	$R^2$	F	$\Delta R^2$	$\Delta F$	$\beta$
Gender	0.119	24.281	0.016*	6.705	0.489
Family Entrepreneurial Background	0.111	22.399	0.005	2.127	0.273
Entrepreneurial Education	0.177	38.759	0.002	0.844	0.167
Internal Locus of Control	0.114	23.239	0.090*	3.707	0.870
Perceived Competence in Entrepreneurial Skills	0.177	38.605	0.006*	2.704	0.382
Peer Entrepreneurial Background	0.120	24.615	0.026**	10.923	0.624
Faculty Entrepreneurial Background	0.121	25.940	0.001	0.343	0.146
Societal Uncertainty Avoidance	0.126	24.696	0.000	0.059	0.093

$N=363$  \*\* $P<0.01$  \* $P<0.05$

The first models of the eight moderating variables included the independent variables (mean-centered) and the moderating variable without the interaction term. All the models displayed significant  $R^2$  and F values ( $p<0.01$ ). However, with the inclusion of the interaction term in each model separately, only four moderating variables displayed significant changes in the  $R^2$  value.

Inclusion of the interaction term of gender and entrepreneurial intention caused significant change in the  $R^2$  value ( $\Delta R^2 = 0.016$ ,  $\Delta F=6.705$ ,  $\beta= 0.489$ ,  $p<0.05$ ). This establishes the hypothesized (H3) positive moderating effect of gender on the translation of entrepreneurial intention into action. Hence, the positive relationship between entrepreneurial intention and action is stronger for male undergraduates. This finding is in line with studies suggesting that males have more tendency to enroll in entrepreneurial activities than females (Shirokova et al., 2015; de Bruin et al., 2007). Moreover, studies indicate that even if females develop intentions in entrepreneurial activities, they might be eventually disregarded (Shirokova et al., 2015). In the Sri Lankan scenario, such findings have been made among undergraduate groups by Nishantha (2009), Thrikawala (2011), and Kumari et al. (2019) further strengthening the finding of this study.

The fourth hypothesis of this study focused on the moderating effect of the family entrepreneurial background. There was no significant change in the  $R^2$  value with the inclusion of interaction terms to support the hypothesis. However, studies showcase that family background and experience in entrepreneurship play a vital role in developing entrepreneurial intention among children (Laspita et al., 2012). Other international and local studies have also observed this relationship such as Thrikawala (2011), but this study did not.

Although entrepreneurial education displayed a positive main effect with respect to entrepreneurial action (Table 9), the hypothesized moderating effect (H5) between intention and action was not supported by the analysis. Entrepreneurial education was measured in this study as to whether undergraduates have followed at least one credited entrepreneurship course in their degree program. Entrepreneurship education has been shown to increase entrepreneurial intention in previous studies such as Solesvik et al. (2014) and Liu et al. (2019). In the Sri Lankan context, Gunawardane & Weerasinghe (2021) have identified similar relationships. This study provides insight to the main effect of entrepreneurial education on the action.

Internal locus of control was observed to be associated with the translation of entrepreneurial intention into action in past studies such as Karabulut (2016) and Shirokova et al. (2015). A higher level of entrepreneurial intention was identified among undergraduates who displayed a stronger internal locus of control according to Kristiansen & Indarti (2004). With such a backdrop, this analysis has also revealed similar results supporting the sixth hypothesis of the study. With the inclusion of the interaction term, the  $R^2$  value changed significantly indicating the moderation effect of the internal locus of control on the relationship between entrepreneurial intention and action ( $\Delta R^2 = 0.090$ ,

$\Delta F=3.707$   $\beta= 0.870$ ,  $p<0.05$ ). Hence, the translation of entrepreneurial intention into action is stronger for undergraduates with a higher locus of control. This finding is in line with the study by Nishantha (2009) on Sri Lankan undergraduates.

Perceived competence in entrepreneurial skills resulted in a positive main effect in the first model. Similarly, the inclusion of the interaction term also caused a significant change in the  $R^2$  value ( $\Delta R^2 = 0.006$ ,  $\Delta F=2.704$   $\beta= 0.382$ ,  $p<0.05$ ) supporting the hypothesized moderation effect (H7). These values suggest that undergraduates with higher perceived competence in entrepreneurial skills display a stronger relationship between entrepreneurial intention and action. Moreover, this demonstrates that if an undergraduate perceived themselves to be more confident in performing entrepreneurial skills, they are more likely to translate their intention into entrepreneurial action. This finding is in line with previous literature. In a study by Kickul et al. (2009), the positive relationship between the perceived entrepreneurial self-efficacy and venture creation was identified. Shirokova et al. (2015) and Saeed et al. (2013) have also declared similar results among undergraduates. Development of entrepreneurial intention was found to be more likely in Sri Lankan undergraduates with higher self-efficacy in entrepreneurship by Weerakoon & Gunatissa (2014).

The presence of peers with entrepreneurial backgrounds has been shown to influence individuals to pursue entrepreneurship themselves by a number of studies such as Bellò et al. (2017), Kacperczyk (2013), and Falck et al. (2010). This study also revealed the hypothesized moderating effect (H8) of having peers with entrepreneurial backgrounds on translating entrepreneurial intention to action. The inclusion of the interaction term between intention and peer background caused significant changes in the  $R^2$  value ( $\Delta R^2 = 0.026$ ,  $\Delta F=10.923$   $\beta= 0.624$ ,  $p<0.001$ ) leading to this interpretation. It is noteworthy to indicate Madurangi et al. (2019) have also identified the importance of peer effect on career aspirations among undergraduates.

The ninth and tenth hypotheses of this study focused on the moderation of societal uncertainty avoidance and faculty entrepreneurial background, respectively. The inclusion of these interaction terms did not lead to significant changes in the  $R^2$  values of the respective models. Hence, the moderation effect of these variables on translating entrepreneurial intentions to action is not supported. Nevertheless, the faculty's entrepreneurial background displayed a positive main effect in the main model providing insight into the importance of this variable in undergraduate entrepreneurship. Past literature has shown that some cultures with low uncertainty avoidance promote entrepreneurship



(Newbery et al., 2018), although this did not reflect in this study. However, the importance of favorable conditions for entrepreneurship in educational institutes was heavily shown to impact undergraduate entrepreneurship in studies such as Shirokova et al. (2015), Saeed et al. (2013), and Kraaijenbrink et al. (2010).

## **Conclusion**

The research was carried out to understand the intention-action gap between entrepreneurial intention and entrepreneurial action among final year undergraduate students of the University of Peradeniya. The research objective is to determine the factors that are likely to cause students with entrepreneurial intentions to actually engage in entrepreneurial start-up activities. Through the study, it is confirmed that there is a positive relationship between entrepreneurial intention and action.

Despite eight variables tested for their effect on the entrepreneurial intention and entrepreneurial actions, only four variables were found to have a moderating effect on the translation of entrepreneurial intention to action. Male undergraduate students showed a higher positive relationship between entrepreneurial intention and action compared to female undergraduate students. Furthermore, entrepreneurial education was found to have a positive main effect on entrepreneurial action, indicating that undergraduate students are more likely to engage in entrepreneurial action when they have followed an entrepreneurial course as a part of their degree program.

In addition to the opportunity to engage in some early start-up activities, the perceived competence in entrepreneurial skills of undergraduate students also reported a positive main effect on entrepreneurial action. It also resulted in a moderating effect concluding that when an undergraduate perceives higher confidence in performing entrepreneurial skills, they are more likely to translate entrepreneurial intentions into entrepreneurial action. The internal locus of control of undergraduates acts as a moderator in a way that a stronger translation of entrepreneurial intention to action can be observed among those who report a higher internal locus of control.

It is crucial to note that the presence of peers with an entrepreneurial background in the university caused a stronger translation of entrepreneurial intention to action among undergraduates. Moreover, the environment at the faculty was found to affect entrepreneurial action among undergraduate students. A better faculty environment towards entrepreneurship positively affected the students' engagement in entrepreneurial action.

## **Recommendations**

The study focused on the final year undergraduate students of the University of Peradeniya, Sri Lanka. Through the research findings, it is possible to provide recommendations to improve the entrepreneurship education provided to university students in order to strengthen the degree of entrepreneurial intentions among its graduates and to facilitate its translation to action. Providing entrepreneurial courses as a part of the degree program was shown to have a positive effect on entrepreneurial action among undergraduate students. Therefore, the faculties could consider incorporating entrepreneurship courses to their curriculum. Furthermore, creating a university and faculty environment that inspires and encourages undergraduate students toward entrepreneurship and positive peer experiences can increase entrepreneurial action. This may be via activities such as establishing entrepreneurship incubators, organizing talks by successful entrepreneurs, providing financial support for start-ups, and training programs on business creation and management. It can be also recommended to take necessary actions to increase the level of confidence in undergraduate entrepreneurial skills to facilitate more entrepreneurial action. Therefore, universities should modify the curriculum for every faculty to ensure that students are able to develop necessary entrepreneurial competencies and a strong internal locus of control. Further, a majority of students in the Faculties of the University of Peradeniya are females (except the engineering Faculty) and the percentage of females is increasing, the faculties have to understand why females have a lesser tendency to become entrepreneurs and change the entrepreneurship courses and the environment to match the needs of the females. It can be argued that empowering and encouraging female undergraduates toward entrepreneurship is necessary.

## **Limitations of the Study and Suggestions for Future Research**

The study was confined to the final year undergraduate students of the University of Peradeniya, Sri Lanka. Further research can be extended to other universities. Furthermore, the translation of entrepreneurial intention and action could be studied in non-university populations to further understand the translation of entrepreneurial intention to action. The study was confined to the final year undergraduate students of the University of Peradeniya, Sri Lanka. However, future research can be extended to other universities. Furthermore, the translation of entrepreneurial intention and action could be studied in non-university populations to further understand the translation of entrepreneurial intention to action.

The data collection of the research was cross-sectional. A cross-sectional data collection eliminates the possibility of unforeseen events changing intention between collections of data. Since intention precedes action in time, this is a major limitation of the study. A longitudinal study would have been appropriate to take into account the time gap between intention formation and action initiation. This is a potential direction for future research in the Sri Lankan context.

### **Declaration of Conflicting Interests**

The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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