

# Entrepreneurial Characteristics and Self-Efficacy: A Multiple Moderators Model

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**Abstract:** *This paper aims to investigate whether entrepreneurial self-efficacy can be predicted by entrepreneurial characteristics of risk-taking propensity, self-confidence and the need of achievement. It also determines whether educational background of entrepreneurs and gender moderate the relationship between entrepreneurial characteristics and entrepreneurial self-efficacy. A total of 188 survey responses were collected from entrepreneurs (66% males & 34% females) through convenience sampling. 46% of these entrepreneurs had business-related educational studies and 55% were from non-business educational programmes. 39% of the entrepreneurs were from family with entrepreneurial background whereas the remaining 61% were from family with non-entrepreneurial background. SmartPLS 2.0 was employed to build the causal model. The measurement model was reliable as indicated by adequate convergent validity as the factor loadings exceeded .50, the AVE exceeded .50 and the composite reliability exceeded .70. Results reported that propensity to take-risk, self-confidence and the need for achievement significantly predicted entrepreneurial self-efficacy. Secondly, educational background significantly moderated the relationship between propensity to take-risk, self-confidence, need for achievement and entrepreneurial self-efficacy. And lastly, gender significantly moderated the relationship between need for achievement and entrepreneurial self-efficacy; but gender did not significantly moderate the relationship between propensity to take-risk, self-confidence and entrepreneurial self-efficacy. Finally, the Goodness-of-Fit (GoF) value was .44, which implied that the model has reliable explaining power.*

**Keywords:** Entrepreneurial Characteristics, Self-Efficacy of Entrepreneurs, Educational Background of Entrepreneurs

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## 1. Introduction

Malaysia is a constitutional monarchy country that comprised of two regions – the Peninsular Malaysia and the Borneo’s East Malaysia, both separated by the South China Sea. Malaysia is not only a multi-ethnic and multi-cultural country but has also blessed with numerous natural and valuable resources such as mineral resources and mining, which accounts for a significant portion of gross domestic product (GDP). According to the world bank (2021), Malaysia is one of the most open economies in the world with a trade to GDP ratio averaging over 130% since 2010. World bank (2021) also stated that Malaysia’s economy has been on an increasing trend after the Asian financial crisis in 1997-1998. In addition, Malaysia is also expected to transit from an upper middle-income economy to a high-income economy by 2024. Statistical data from the Malaysia External Trade Development Corporation (MATRADE) (2020). revealed that electrical and electronic, petroleum, chemicals, palm oil, optical and scientific equipment,

and rubber products make up of nearly 64% of the country's major export products in 2020, with a total export of RM800.59 billion.

Given the vast opportunities that the natural resources provide, entrepreneurship has become one of the key elements in developing the country, particularly in a small and medium enterprise (SME) as it gives vitality to the business. As stated by Small Medium Enterprise Corporation Malaysia (SMEE Corp) (2016), the definition of entrepreneurship has gone beyond the process of identifying and starting a business venture, sourcing and organizing the required resources, as well as assume risks associated with the venture, but, in fact, entrepreneurship has been redefined to include the set of skills in identifying, evaluating viability, and exploiting and developing opportunities to create new products and services into a profitable business venture, as well as being resilient towards adversities and hardships. Kozubíková et al. (2017) suggest that expectations and objectives of business owners play a vital role in determining the existence and success of business venture. The idea of Kozubíková et al. (2017) can be further explained through the concept of self-efficacy, which refer to an individual's belief in his or her own capacity to execute the behaviours necessary to achieve positive outcomes. With that, it can be inferred that both sociodemographic and personality characteristics play an important role in determining if an individual will engage in entrepreneurship. Therefore, given the significant influence of the characteristics on entrepreneurship, the current study aims to investigate if entrepreneurial self-efficacy can be predicted by entrepreneurial characteristics, particularly, the risk taking propensity, self-confidence, and the need of achievement. As such, three research questions have been formulated: (1) Are entrepreneurial characteristics (propensity to take risk, self-confidence, and need for achievement) significant predictors of entrepreneurial self-efficacy? (2) Does educational background of entrepreneurs moderate the relationship between entrepreneurial characteristics and entrepreneurial self-efficacy? And (3) Does gender moderate the relationship between entrepreneurial characteristics and entrepreneurial self-efficacy?

## 2. Literature Review

### 2.1 Relationship Between Self-Efficacy and Entrepreneurial Characteristics (Propensity to Take Risk, Self-Confidence, and Need for Achievement)

#### *Self-Efficacy*

Self-efficacy theory was first proposed by Bandura in cognitive psychology, where the theory refers to individual's belief in his/her ability to succeed in specific situations or accomplish a task (Bandura, 1997). According to Idrus and Setiyadi (2020), self-efficacy plays an important role to increase the confidence of an individual if the individual can perform the tasks that there are no obstacles to inhibit their work. However, self-efficacy can be attained, increased, reduced, or changed through other factors such as the nature of the tasks, the situations, the role of individuals in the environment, the abilities of the individuals and so on.

#### **Propensity to Take Risk**

The element of propensity to take risk has long been emphasized in entrepreneurship, where the concept refers to an individual's willingness to make decision or course of action involving uncertainty (Zhao et al., 2010). Similarly, Knight (1921) seen entrepreneurs as the "risk-bearers" decades ago. According to Knight (1921), entrepreneurial activities are accompanied with various uncertainties and entrepreneurs must decide whether to take certain course of action along the way, in which the element of risk is well conceptualized throughout. Several earlier narrative reviews concluded that there is no difference in risk tolerance between

entrepreneurs and non-entrepreneurs (Brockhaus, 1980; Masters and Meier, 1988). However, recent meta-analyses have shown contradicting findings where entrepreneurs do differ from non-entrepreneurs in terms of a broad range of personality including propensity to take risk (Zhao et al., 2010). Collins et al. (2004), and Steward and Roth (2007) suggest that propensity to take risk is significantly higher in entrepreneurs in comparison to non-entrepreneurs. In examining the relationship between self-efficacy and propensity to take risk, various research proposed a positive relationship between the two. Culbertson et al. (2011) and Kumara (2012) found that college students with entrepreneurial career aspirations tend to exhibit higher self-efficacy than students with managerial goals. Hecchavaria et al. (2012) proposed that higher self-efficacy does not guarantee success but it did make an individual to be more persistence in achieving a goal (i.e., founding of a business).

### **Self-Confidence**

Empirical study on entrepreneurship proposed that self-confidence is considered as one of the entrepreneurial personality-related characteristics. Several economists recognized the role of uncertainty and entrepreneurship, emphasizing that individuals tend to differ in self-confidence in dealing with uncertainties, which distinguishes entrepreneurs from non-entrepreneurs (van Praag, 1999). The argument is supported by Kickul et al. (2009) stating that individuals who are involved in entrepreneurship are found to be more confident than non-entrepreneurs. According to Steenkamp and Geilens (2003), the difference in self-confidence between entrepreneurs and non-entrepreneurs could be due to the internal aspect of individual such as self-efficacy and self-confidence that provide information to evaluate a decision and integrative view about one's behavior. Knight (1921) further explained the relationship between self-efficacy and self-confidence as closely related concept. Based on the explanation, achieving success helps build a sense of self-efficacy and thus, helps to build self-confidence. In a study by Chen et al. (1998), entrepreneurs and managers were asked to rate their confidence in dealing with different type of tasks involving running a business. Result of the study indicated that entrepreneurs tend to demonstrate higher self-efficacy and self-confidence for some of the tasks.

### **Need for Achievement**

The need for achievement can be conceptualized as a personality-related characteristic that motivates an individual to face the challenge in achieving goals (Baidi & Suyatno, 2018). Based on the definition, it is clearly seen that entrepreneur needs to have strong desire in order to build, expand, and sustain a business (Rauch & Frese, 2007). Relationship between the need for achievement and business development has been evidenced as early as 1961 by McClelland. The positive relationship has been reported by various researchers concluded that the need for achievement represents a crucial factor in entrepreneurship, in which the need for achievement, in particular, has a significant influence on entrepreneurship intention (Beverland & Lockshin, 2001; Farouk & Ikram, 2014). On top of that, the need for achievement can also encourage and facilitate decision-making process and propensity to take risk (Baidi & Suyatno, 2018). The relationship between self-efficacy and the need for achievement is reflected in the study by Leary and Kowalski (1990), where the authors suggested that individual who have a high need for achievement are more likely to focus their behaviors that may create an impression of competency.

## **2.2 Relationship Between Gender, Educational Background and Entrepreneurial Self-Efficacy**

Malaysia as a developing country is experiencing different challenges in terms of entrepreneurship in comparison to developed countries. Some of the challenges encountered

by developing countries include incomplete markets, lack of political stability, bureaucratic business environments, poorly designed and enforced contract and property laws, inadequate infrastructure, limited access to capital and many others (Hossain et al., 2018). Despite the challenges, Malaysia is striving to increase the number of entrepreneurs over the years. However, despite the growing number of entrepreneurs in the country, most of the businesses are still being occupied by men (Department of Statistics Malaysia, 2019). Teoh and Chong (2014) reported that approximately 20% of all businesses in Malaysia are built by females. One of the possible reasons for the gender differences could be due to the male-dominant culture, which creates an unequal access to entrepreneurship training and capital support for women (Hossain et al., 2018). Additionally, gender role could have been another reason for the disparity, where females are expected to put their time in unpaid household chore work. As such, female entrepreneurs have lack of quality time allocated to their business. Ample past research indicated that gender, in general, did not moderate the relationship between self-efficacy and entrepreneurial characteristics (Fatoki, 2014). Regardless of gender disparity, an interesting fact can be observed in the field of entrepreneurship in Malaysia, where females participating in entrepreneurship activities tend to have higher education in comparison to males.

In general, public policy suggested that entrepreneurship education tend to contribute to entrepreneurship intentions (European Commission, 2006). Keogh and Galloway (2004) concluded that entrepreneurship education can help to develop attitudes and behaviors in creating new business. Similarly, Vohora et al. (2004) suggested that individuals who are exposed to entrepreneurship education are more likely to identify new opportunities for commercial applications. Piperopoulos and Dimov (2015) supported these past research findings that individuals with practical exposure to entrepreneurship will have higher self-efficacy and interest in entrepreneurship. And Santoso (2017) proposed that the three categories of entrepreneurship education – education about entrepreneurship, education for entrepreneurial activity, and education in entrepreneurial activity somehow bring individuals to the world of entrepreneurship and initiate entrepreneurship. Therefore, past studies confirmed that when the experiences accumulated, the level of self-efficacy increases as well.

### **3. Methods**

#### **3.1 Participants**

The target population of this study consisted of entrepreneurs in Malaysia. 188 entrepreneurs participated in the study. Convenience sampling, a non-probability sampling method was adopted for data collection purpose. Of the 188 entrepreneurs, 66.00 per cent were male entrepreneurs and 34.00 per cent were female entrepreneurs. Concerning the educational background, 45.74 per cent of the entrepreneurs pursued their studies in business-related programme while the remaining 54.26 per cent of the entrepreneurs pursued their studies in non-business programme. As for family background, 39.40 per cent of the entrepreneurs came from family with entrepreneur background whereas the remaining 60.60 per cent came from family with non-entrepreneur background.

#### **3.2 Instruments**

##### ***Entrepreneurial Self-Assessment Scale***

The Entrepreneurial Self-Assessment Scale developed by Technonet Asia (1981) was adopted to measure the entrepreneurial characteristics, namely propensity to take risk, self-confidence, and need for achievement. A total of 18 items were extracted from the 36-item

Entrepreneurial Self-Assessment Scale, which were designed to measure the need for achievement (NFA), locus of control, propensity to take risk (PTTR), self-confidence (SC), tolerance of ambiguity, and innovativeness of entrepreneurs. Each statement was rated by a five-point Likert scale ranging from 1–Strongly Disagree to 5–Strongly Agree. There were 9 reversed-scored items.

### ***Entrepreneurial Self-Efficacy Scale***

The Entrepreneurial Self-Efficacy Scale developed by McGee, Peterson, Mueller, and Sequeira (2009) was adopted to measure the entrepreneur's confidence in the ability to search for opportunities, to plan, to marshal resources, and to implement. The scale consisted of 19 items. Each item was rated based on a five-point Likert scale ranging from one that indicated “Very Little” to five that indicated “A Lot”. There are no reverse scored items. The Entrepreneurial Self-Efficacy Scale is a reliable instrument as the Cronbach coefficients range from  $\alpha = .76$  to  $\alpha = .85$  (McGee et al., 2009).

### **3.3 Procedure**

Permission to conduct the research on entrepreneurs was acquired from the University College's research ethics committee. A team of research assistants were recruited to approach the entrepreneurs, obtained their informed consent and assisted them to fill-in the questionnaires. These entrepreneurs were assured that the data provided would be kept confidential. Data collected were entered into Statistical Package for the Social Sciences (SPSS) Statistics version 22 prior to model building using SmartPLS 2.0.

### **3.4 Data Analysis**

SmartPLS 2.0 was employed to build the causal model. PLS model comprises of two sub-models, namely measurement model and structural model. For the measurement model, the construct validity was assessed through convergent validity and discriminant validity while construct reliability was assessed through composite reliability. For the structural model, the path between entrepreneurial characteristics and entrepreneurial self-efficacy was tested for significance through bootstrapping procedure. A bootstrapping of 5000 samples was applied. To assess the moderation effect of educational background and gender, the multi-group moderation technique (Gaskin, 2013) was adopted. Finally, to confirm the generalisability of the present model across future samples, goodness-of-fit (GoF), which is a cut-off value for global validation of the PLS model was estimated.

### **3.5 Assessment of Measurement Model**

Figure 1 illustrates the measurement model. The measurement model demonstrated adequate convergent validity as the factor loadings exceeded .50 (.59 to .92), the AVE exceeded .50 (.51 to .74), and the composite reliability exceeded .70 (.74 to .93). Eleven indicators of entrepreneurial characteristics were deleted due to low factor loadings and six indicators of entrepreneurial self-efficacy (SE) were deleted due to low AVE. The deletion of the indicators resulted in adequate convergent validity. The discriminant validity was satisfactory as the square roots of AVE (.71 to .86) exceeded the intercorrelations of the latent variables (.33 to .57). Figure 2 showed the indicators were significantly related to the respective latent variable as the *t*-value exceeded 1.96 (4.09 to 25.04). The measurement model was considered reliable as the composite reliability exceeded .70 (.74 to .93).

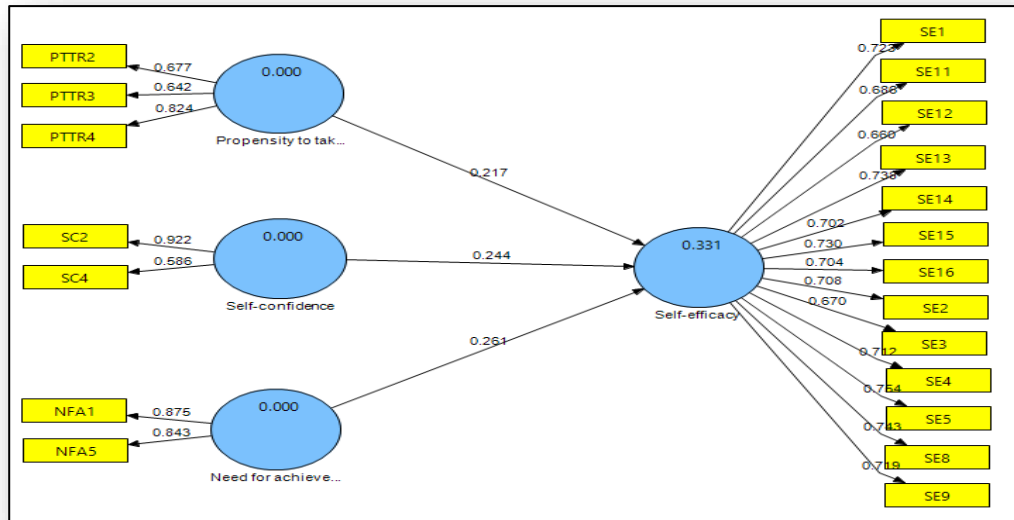


Figure 1: The Measurement model

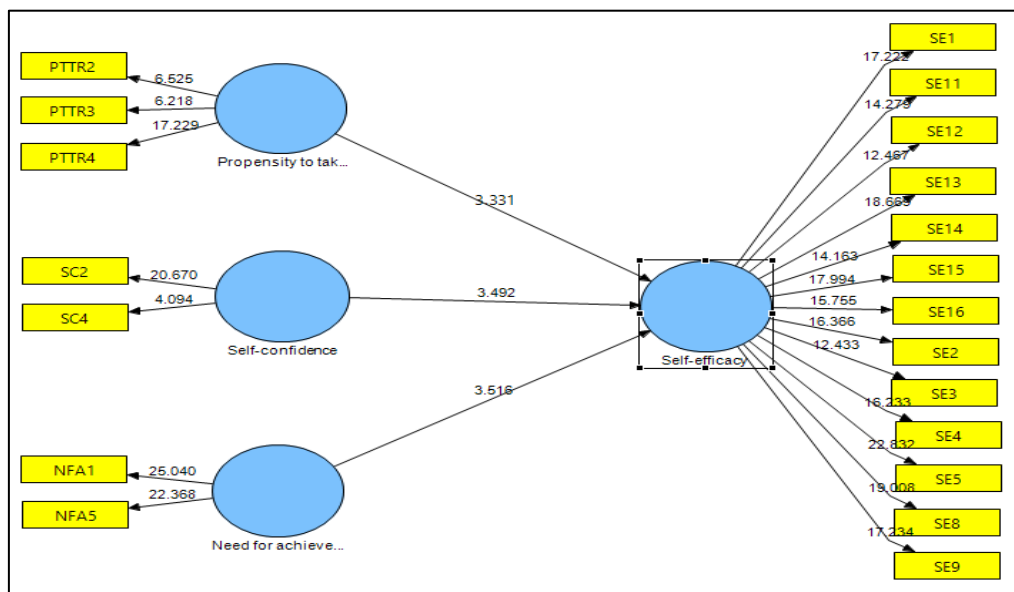


Figure 2: Bootstrapping of measurement model

#### 4. Results

With regard to the first research question— “Are entrepreneurial characteristics significant predictors of entrepreneurial self-efficacy?”, the results as shown in Figure 2 that entrepreneurial characteristics of propensity to take-risk, self-confidence, and need for achievement significantly predicted entrepreneurial self-efficacy ( $t$ -value = 3.33,  $p < .05$ ;  $t$ -value = 3.49,  $p < .05$ ;  $t$ -value = 3.52,  $p < .05$  respectively). The explanatory power was  $R^2 = .33$ , which means that the entrepreneurial characteristics of propensity to take risk, self-confidence, and need for achievement were accounted for the 33.10 per cent of variance in entrepreneurial self-efficacy. The explanatory power is considered substantial (Cohen, 1988). Regarding the second research question— “Does educational background of entrepreneurs moderate the relationship between entrepreneurial characteristics and entrepreneurial self-

efficacy?”, the results indicated that educational background significantly moderated the relationship between entrepreneurial characteristics of propensity to take risk, self-confidence, need for achievement and entrepreneurial self-efficacy ( $t$ -value = 2.11,  $p < .05$ ;  $t$ -value = 2.00,  $p < .05$ ;  $t$ -value = 1.97,  $p < .05$  respectively). In the relationship between the need for achievement and entrepreneurial self-efficacy, the effect for entrepreneurs with educational background in business (Sample Mean= .45, SD= .09) is significantly stronger than entrepreneurs with educational background in non-business (Sample Mean= .24, SD= .07). Meanwhile, in the relationship between propensity to take risk and entrepreneurial self-efficacy and also in the relationship between self-confidence and entrepreneurial self-efficacy, the effect for entrepreneurs with educational background in non-business (Sample Mean= .30, SD= .06; Sample Mean= .30, SD= .05 respectively) is significantly stronger than entrepreneurs with educational background in business (Sample Mean= .11, SD= .06; Sample Mean= .11, SD= .09 respectively). Table 1 displays the data of educational background moderating the relationship between entrepreneurial characteristics and entrepreneurial self-efficacy.

**Table 1: Educational Background Moderating the Relationship between Entrepreneurial Characteristics and Entrepreneurial Self-Efficacy**

Path	$t$ -statistic	$p$ -value
1. Propensity to Take Risk -> Entrepreneurial Self-Efficacy	2.105	.037
2. Self-Confidence -> Entrepreneurial Self-Efficacy	1.995	.048
3. Need for Achievement -> Entrepreneurial Self-Efficacy	1.974	.050

Concerning the third research question — “Does gender moderate the relationship between entrepreneurial characteristics and entrepreneurial self-efficacy?”, the results signified that gender significantly moderated the relationship between entrepreneurial characteristics of the need for achievement and entrepreneurial self-efficacy ( $t$ -value = 2.28,  $p < .05$ ), such that the effect for male entrepreneurs (Sample Mean= .37, SD= .06) is significantly stronger than female entrepreneurs (Sample Mean= .01, SD= .21). However, gender did not significantly moderate the relationship between other entrepreneurial characteristics such as the propensity to take risk, self-confidence, and entrepreneurial self-efficacy ( $t$ -value = .64,  $p > .05$ ;  $t$ -value = .38,  $p > .05$  respectively). Table 2 displays the data of gender moderating the relationship between entrepreneurial characteristics and entrepreneurial self-efficacy.

**Table 2: Gender Moderating the Relationship between Entrepreneurial Characteristics and Entrepreneurial Self-Efficacy**

Path	$t$ -statistic	$p$ -value
1. Need for achievement -> Entrepreneurial Self-efficacy	2.279	.024
2. Propensity to take risk -> Entrepreneurial Self-efficacy	.635	.526
3. Self-confidence -> Entrepreneurial Self-efficacy	.378	.706

Finally in explaining the power of PLS model, a global fit assessment was conducted to ensure the model has adequate explaining power. The Goodness-of-Fit (GoF) value was .44, which exceeded the cut-off value of .36 for large effect sizes. This implied that the present model has better explaining power as compared to the baseline values.

## 5. Discussion

The first finding of this study indicated that propensity to take-risk, self-confidence and the need for achievement significantly predicted entrepreneurial self-efficacy. This result supported findings of Knight (1921), Kickul et al. (2009), Baidi and Suyatno (2018), and Idrus and Setiyadi (2020) that achieving entrepreneurial success helps build a sense of self-efficacy. The factors to build entrepreneurial self-efficacy were also assessed in previous studies and the propensity to take risk is proven to be significantly higher in entrepreneurs in comparison to non-entrepreneurs (Collins et al., 2004; & Steward & Roth, 2007). Higher self-efficacy did make an individual to be more persistent in achieving a business goal though it may not guarantee success, the need for achievement can also encourage and facilitate decision-making process and propensity to take risk, and hence entrepreneurs are found to be more confident as compared to non-entrepreneurs (Kickul et al., 2009; Hecchavaria et al., 2012; & Baidi & Suyatno, 2018).

The second finding of this study reported that educational background significantly moderated the relationship between propensity to take-risk, self-confidence, need for achievement and entrepreneurial self-efficacy. This is consistent with past studies that entrepreneurship education combined with accumulated entrepreneurial experiences, can increase interest in entrepreneurship and the level of entrepreneurial self-efficacy (Keogh & Galloway, 2004; Piperopoulos & Dimov, 2015; & Santoso, 2017). This significant result can also be explained by the demographic of the current respondents which consisted of 46% having business-related educational background and 39% were from family with entrepreneurial background. The effect for entrepreneurs with educational background in business (Sample Mean= .45, SD= .09) is significantly stronger than entrepreneurs with educational background in non-business (Sample Mean= .24, SD= .07). Finally, this result is also consistent with Vohora et al. (2004) who found that entrepreneurs with entrepreneurship education are more likely to identify new opportunities for commercial applications purpose, and hence are more self-efficient.

The last finding of this study found that gender significantly moderated the relationship between the need for achievement and entrepreneurial self-efficacy. According to the 2018 Malaysian statistics, women-owned businesses constituted 20.6 per cent of the total 907,065 SMEs in Malaysia (SME Corp, 2018). And females participating in entrepreneurship tend to have higher education in comparison to males (Fatoki, 2014). The study conducted by Fatoki (2014) reported that gender did not moderate the relationship between self-efficacy and entrepreneurial characteristics and she supported this conclusion with ample past studies. However, this current research found that gender did significantly moderated the relationship between only one entrepreneurial characteristic which is the need for achievement and entrepreneurial self-efficacy; but gender did not significantly moderate the relationship between other entrepreneurial characteristics such as propensity to take-risk, self-confidence and entrepreneurial self-efficacy. Therefore, in this regard the result of this current study does support the findings of past studies that gender in general is not a significant moderator to the relationships between entrepreneurial self-efficacy and characteristics.

## 6. Conclusion

This study has therefore confirmed that entrepreneurial characteristics (propensity to take-risk, self-confidence and the need for achievement) do predict entrepreneurial self-efficacy. And entrepreneur education, experience and entrepreneurial family background can increase the confidence of an individual to perform the entrepreneurial tasks and this entrepreneurial self-



efficacy will lead to the success of the entrepreneurialship and hence there are no obstacles to inhibit their work. This conclusion supports Culbertson et al. (2011) and Kumara (2012) who found that college students with entrepreneurial career aspirations tend to exhibit higher self-efficacy.

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