

The Moderating Role of Individual Cultural Values on the Relation between TPB Predictors and Entrepreneurial Intention: Evidence from Egypt and Scotland, UK

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Abstract

Based on the Theory of Planned Behavior (TPB), the purpose of this study is to identify the antecedents of entrepreneurial intentions (EI) of university students in both Egypt and Scotland, UK. In addition, the research investigates the moderation role of individual cultural values and nationality on the relation between TPB cognitive predictors and entrepreneurial intention. Data was collected using self-administered questionnaire from 243 Egyptian university students. Whereas, Web survey was applied to collect data from 159 Scottish, UK university students. Structural Equation Modelling was applied to examine the research proposed model. The results confirm that both of attitude and perceived behavioral control are significant antecedents of Egyptian students' entrepreneurial intention. Yet, in the case of Scotland, UK, attitude was reported as the sole predictor of entrepreneurial intention. In addition, students' individual cultural values did not moderate TPB cognitive predictors – entrepreneurial intention relation in both samples, meanwhile, nationality did. The study offers theoretical contribution by examining the moderating role of cultural values at the individual level, as well as contextual contribution by validating the research model in a cross-cultural setting namely: Egypt and Scotland, UK, were both represent two diverse cultural clusters in terms of

their rankings on Hofstede's cultural dimensions index. In addition, they both represent distinct types of economies i.e. efficiency versus innovation driven economies respectively.

Keywords: Culture, Individual cultural values, Theory of Planned Behavior, Entrepreneurial intention, Nationality, University students, Egypt, Scotland, UK

1. Introduction

Entrepreneurship has become more important than ever in recent years. The strengthening of small and medium-size enterprises (SME's) via globalization and information technology have acted to ensure entrepreneurship remains a significant area of research (Sesen, 2013). There is consensus among governments, practitioners and researchers that cultural context shape entrepreneurial attitudes and intentions (European Commission, 2012, Shinnar *et al.*, 2012).

Several authors argued in favor of developed countries benign environments that foster and nurture entrepreneurship as opposed to developing countries hostile ones (e.g. Valliere, 2014; Bandera *et al.*, 2018; Alammari, 2019; Ezeh *et al.*, 2019). Nonetheless, based on the Global Entrepreneurship Monitor (GEM), Bosma and Levie (2009) noticed that nearly one third of the start-ups in developing countries are driven by necessity as opposed to 17 per-cent in developed ones. Egypt is no difference where 42.7 per cent of early stage entrepreneurs remain motivated by necessity instead of opportunity due to the absence of work alternatives (GEM Egypt 2017-2018). Such result emphasizes that turbulent and unsettled contexts in some developing countries, along with political unrest may very well serve as a fertile soil for entrepreneurial opportunities and encourage senior university students and graduates to become self-employed, as opposed to more settled and established *milieu* in developed countries (e.g. Bezgodov, 1999; Jones *et al.*, 2008; Iakovleva, 2007; Iakovleva *et al.*, 2011).

Egypt acknowledges entrepreneurship for its vital role in job creation, opening-up opportunities for youth, and stimulating innovation that contribute directly to the country economic prosperity (Global Entrepreneurship Monitor (GEM), Egypt National Report, 2016-2017, 2017-2018). According to GEM Egypt National Report (2017-2018), the country is an efficiency driven economy, where total early-stage entrepreneurial activity (TEA), indicating the percentage of 18-64 years old population that is involved in starting a business rate in Egypt was 13.3 per cent, ranking 19, slightly higher than the global average of 12.3 per cent. In addition, entrepreneurial intention rate is also high; where 55.5 per cent of Egyptian non-entrepreneurs surveyed had interest in, or intentions towards starting a business within the next three years. This score comes second among all GEM countries surveyed (65 country), and more than double the global average.

Furthermore, overall Egyptian societal values and attitudes increasingly support entrepreneurship as a positive and desirable activity where it is perceived as a good career choice by 75.9 per cent of Egyptians (GEM 2017-2018), indicating the growth of the entrepreneurial culture, especially among youth who perceived it as a way forward towards economic independence where unemployment rate accounted for 9.2 per cent in the second quarter of 2020 according to CAPMAS Egypt 2020 (<http://english.ahram.org.eg/News/369332.aspx>).

Additionally, the attention given to entrepreneurship in Egypt has positively improved its ecosystem measures such as: access to finance; government policies support and relevance; and cultural and social norms. Yet, entrepreneurship education at school and universities remains low, where Egypt consistently ranked at the bottom of all GEM countries from 2012 to 2017 (GEM 2017-2018).

Despite entrepreneurship phenomenon importance, noticeably, there is dearth of research on students' entrepreneurial intentions in emerging and developing (efficiency-driven) countries compared to their developed (innovation-driven) counterparts (Iakovleva *et al.*, 2011; Aleksandrova *et al.*, 2020). The few studies conducted in developing (efficiency-driven) countries to date researched South Africa students (e.g. Gird and Bagraim, 2008), Polish students (e.g. Jones *et al.*, 2008), and Chinese students (e.g. Wu and Wu, 2008).

Hence, the current research is an attempt to fill this gap, besides answering the call brought forward from some scholars to examine the moderating role of culture on entrepreneurial intention (Urban, 2004; Liñán and Chen, 2009; Siu and Lo, 2013). Consequently, the existing study conducts a cross cultural investigation into the moderating role of Egyptian and Scotland, UK university students' cultural values as well as nationality on the relation between Theory of Planned Behavior (TPB) cognitive predictors and entrepreneurial intentions. Hofstede's (1998) cultural dimensions framework is applied. The rationale behind focusing on Egypt and UK is that they represent two diverse cultural clusters in terms of their rankings on Hofstede's four dimensions of individualism (IDV), uncertainty avoidance (UA), power distance (PD), and masculinity (MAS). In addition, they both signify distinct types of economies (i.e. efficiency versus innovation driven economies) respectively.

The socio-cognitive Theory of Planned Behaviour (TPB) developed by (Ajzen, 1998,1991) regards attitudes, subjective norms and perceived behavioural control as antecedents to behavioural intentions. TPB has proven to perform appropriately and fits well in researching students' entrepreneurial intentions globally which is the behavior under research in this study (e.g. Nikou *et al.*, 2019; Lortie and Castogiovanni, 2015; Linan and Chen, 2009). Entrepreneurial intention is quite dynamic and has the power to predict actual entrepreneurial behavior (Fayolle and

Linan, 2014; Kautonen *et al.*, 2015; Ligouri *et al.*, 2018). Meanwhile, Linan *et al.* (2011) and Joensuu-Salo *et al.* (2020), in longitudinal studies, found that entrepreneurial intention is stable over time, hence proves its strength to predict subsequent behaviour and even alter previous behaviour tendencies. This is in consonance with Krueger *et al.* (2000, p. 411) who stated that “intentions have proven the best predictor of planned behavior, particularly when that behavior is rare, hard to observe, or involves unpredictable time lags”. Consequently, it deemed appropriate to investigate university students entrepreneurial intentions antecedents in order to provide both researches and policymakers with significant insights as why some students will pursue entrepreneurial career and engage in an entrepreneurial behavior while others will not (Sesen, 2013; Armstrong, 2014; Maresch *et al.*, 2016).

To this end, this paper aims at the following: First, validates and verifies the cross-cultural generalizability of the Theory of Planned Behaviour (TPB) parameters. Second, investigates any similarities and/or differences in the pattern of influence of TPB cognitive predictors on Egyptian and Scotland, UK university students’ entrepreneurial intentions. Finally, examines the moderating role of individual cultural values and nationality on the relation between TPB cognitive predictors – entrepreneurial intentions among Egyptian and Scotland, UK university students. The current study offers theoretical (examines individual cultural values); contextual (e.g. Egypt and UK), and methodological (e.g. applying structural equation modelling approach) contributions by extending TPB to the Egyptian context.

The rest of the paper is organized as follows. Theoretical background and hypotheses development are outlined in the next section. Then, research methodology followed by data analyses and results are drawn. Afterward, discussion and conclusions are presented. Finally, the research concludes with significant implications, limitations and recommendations for future research.

2- Theoretical Background and Hypotheses Development

2-1 Theory of Planned Behavior (TPB) and Entrepreneurial Intention

The literature identified two models for examining entrepreneurial intention behavior namely: Theory of Planned Behavior (TPB) developed by Ajzen (1989, 1991), and Entrepreneurial Event Model (EEM) presented by Shapero and Sokol (1982) (e.g. Chen *et al.*, 2015; Miralles *et al.*, 2015). Yet, TPB has been extensively applied in the entrepreneurship field due to its ability to predict entrepreneurial behavior (e.g. Iakovleva *et al.*, 2011, Shinnar *et al.*, 2012; Schlaegel and Koenig, 2014; Kautonen *et al.*, 2013; Kautonen *et al.*, 2015; Van Gelderen *et al.*, 2015). In addition, it considers both social and personal factors to justify behavioral intentions (e.g. Fini *et al.*, 2012; Maes *et al.*, 2014).

Thus, according to TPB, entrepreneurial intention (EI) is a function of entrepreneurial attitude (EA), subjective norms (SN) which reflect the social pressure the individuals encounter in order to either perform, or not the entrepreneurial behavior, and perceived behavioral control (PBC) where the individuals believe that they have control over the entrepreneurial behavior.

The current study adopts Thompson's (2009) definition of entrepreneurial intention (EI) as "self-acknowledged conviction by a person that s/he intends to set up a new business venture and consciously plans to do so at some point in the future" (p. 676).

However, the effect of TPB cognitive predictors on EI is far from being consistent, where some authors reported significant positive associations (e.g. Paray and Kumar, 2020; Ferri *et al.*, 2019; Farook *et al.*, 2018; Utami, 2017; Aloulou, 2016; Kautonen *et al.*, 2015; Karimi *et al.*, 2014; Yang, 2013; Solesvik, 2013; Iakovleva *et al.*, 2011). While, others revealed that attitude is the only antecedent to EI (e.g. Shahab *et al.*, 2019; Miranda *et al.*,

2017; Do and Dadvari, 2017; Haus *et al.*, 2013). Although, Siu and Lo (2013) found insignificant effect of attitude on Chinese entrepreneurial intentions.

Whereas, Fayolle and Gailly (2005) and Linan (2005), Wu and Wu (2008), Solesvik *et al.* (2012), Maresch *et al.* (2016), Al-Mamary *et al.* (2020), Entrialgo and Iglesias (2020), and Aleksandrova *et al.* (2020) emphasised the significant effect of both attitudes and PBC on EI among Chinese, Ukrainian students, Austrian, Saudi Arabian and Russian's respectively. Likewise, Eid *et al.* (2019) report a significant positive association between PBC and entrepreneurial intentions among United Arab Emirates national business and engineering undergraduate students

On the other hand, SN were sometimes found to be a direct predictor of EI (e.g. Moriano *et al.*, 2012; Engle *et al.*, 2010; Siu and Lo, 2013; Maresch *et al.*, 2016; Eid *et al.*, 2019; Ephrem *et al.*, 2019). While in another, they showed indirect effect via attitude and PBC (e.g. Linan and Chen, 2009; Srivastava and Misra, 2017). Occasionally, SN reported insignificant association with EI (e.g. Linan and Chen, 2009; Solesvik *et al.*, 2012; Esfandiar *et al.*, 2019; Al-Mamary *et al.*, 2020; Entrialgo and Iglesias, 2020; Aleksandrova *et al.*, 2020).

Given Ajzen (1991) assertion that TPB cognitive predictors influential effects are situational, and likely to differ across behaviours, in addition to the mixed results highlighted above, the following hypotheses are proposed:

H1: there is a significant positive relationship between Egyptian and Scottish students' attitudes and entrepreneurial intention

H2: there is a significant positive relationship between Egyptian and Scottish students' subjective norms and entrepreneurial intention

H3: there is a significant positive relationship between Egyptian and Scottish students perceived behavioural control and entrepreneurial intention

H4: There are significant differences between Egyptian and Scottish students with respect to:

- a- Entrepreneurial attitude*
- b- Subjective norms*
- c- Perceived behavioural control*
- d- Entrepreneurial intention*

2.2 Culture and Entrepreneurship

Although there is no universally accepted definition of culture, however, Hofstede's (2001) definition has been extensively used where the author defined culture as "the collective programming of the mind that distinguishes the members of one group or category of people from another."(p.9). In this sense culture is a way of categorizing people who shared same values, beliefs and perceptions as a result of getting exposed to similar life experiences which influence their behavior and differentiate them from their opponents in other cultures (Hofstede, 1980, 1981, 1998; Smith, 2002; Shinnar *et al.*, 2012).

Number of studies have recognized that national culture stimulates innovation and growth (e.g. Rauch *et al.*, 2013); affects the individual's value system and helps him/her developing entrepreneurial skills (e.g. Bull and Willard, 1993); allows individual's to identify business opportunities (e.g. Baker, Gedajlovic and Lubatkin, 2005; Hechavarria and Reynolds, 2009); develops entrepreneurial beliefs and intentions, and further behaves entrepreneurially (e.g. Siu and Lo, 2013; Kreiser *et al.*, 2010; Madichie, Nkamnebe and Idemobi, 2008; Devonish *et al.*, 2010; Bogatyreva *et al.*, 2019).

Based on Hofstede's (1980) cultural dimensions framework, Busenitz and Lau (1996) and Hayton *et al.* (2002) reported that "researchers have hypothesized that entrepreneurship is

facilitated by cultures that are high in individualism, low in uncertainty avoidance, low in power-distance, and high in masculinity"(p.34). Hence, according to Egypt and Scotland, UK ranks on all four dimensions emphasized as follows: Individualism - IDV - (25), (89), Uncertainty Avoidance – UA (80), (35), Power Distance - PD (70), (35), and Masculinity - MAS (45), (66) respectively (Hofstede Centre, 2015). It could be inferred that as opposed to Scotland, UK, Egypt is not the type of culture that foster entrepreneurship as further indicated hereunder.

According to Hofstede (1980, 2001) individualism “pertains to societies in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family”. As opposed to UK, Egypt ranks 25 on individualism/collectivism index is low enough to consider it a collectivistic country, where individual’s self-image is defined in terms of ‘we’ instead of ‘I’. The Egyptians’ tend to establish long-term relations with their close family and the extended one, as well as with friends, and neighbours.

Uncertainty Avoidance is “the extent to which the members of a culture feel threatened by uncertain or unknown situations”. Egyptians’ fear ambiguous situations, they need to feel secured, hence they prefer to follow written rules or unwritten norms. Such cultural value doesn’t necessarily encourage innovation and venture creation.

Power Distance is defined as “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally”. While comparing Egypt’s rank with UK, it is very clear that hierarchical system is highly accepted in Egypt, where those lie at the top of the hierarchy dominate the power and the authority.

Masculinity “represents the dominant male sex role pattern in the vast majority of traditional and modern societies”. “high score (Masculine) on this dimension indicates that the society will be driven by competition, achievement and success, with success being defined by the winner / best in field – a value system that starts in school and continues throughout organisational life. A low score (Feminine) on the dimension means that the dominant values in society are caring for others and quality of life”. While looking at the ranks of both countries under investigation, it appears that Egypt is, relatively, a feminine country, where caring for others and quality of life are dominating the Egyptian culture, as opposed to competition and achievement in more masculine countries like Scotland, UK.

Despite the extensive use of Hofstede’s (1980) cultural dimensions, their relationship with entrepreneurship is far from being consistent (Giacomin *et al.*, 2010). Where some researchers report positive association between individualism (Levenburg and Schwarz, 2008; Van Hooft and De Jong, 2009) and masculinity (Levenburg and Schwarz, 2008) and entrepreneurial behaviour. While others assert that collectivism influences entrepreneurial behavior in collectivism dominating countries (Tiessen, 1997; Nguyen *et al.*, 2010); affects the entrepreneurial potential of United Arab Emirates business university students (Zeffane, 2014), and it is the driving force of competitiveness and entrepreneurial intentions among Balinese and American undergraduate college students (Houston *et al.*, 2012).

Meanwhile, the association between cultural values and entrepreneurial intentions has been well recognized in the literature. For instance, Baughn *et al.* (2006) reported significant differences in entrepreneurial intentions among Vietnamese, Philippine and Chinese business students. This result revealed that, although the three countries under investigation are in the same continent, and they may share some cultural values, however it seems that differences at the country level have more

power over entrepreneurial intention. Correspondingly, Solesvik *et al.* (2014) and Thornton *et al.* (2011) emphasized the effect of cultural factors on individual's entrepreneurial intention and his/her decision to become an entrepreneur and to start a new business. Similarly, DePillis and Reardon (2007) asserted that cultural perceptions of entrepreneurship affect individual's entrepreneurial intention level. Likewise, Giacomini *et al.* (2010) examine American, Asian and European university students, Goktan and Gunay (2011) investigate Turkish and American respondents, and Shinnar *et al.* (2012) study Chinese, American and Belgium students, they all confirmed the significant interrelationship between culture and entrepreneurial cognition and intention level that is highly likely to vary by country. In contrast, Pruett *et al.* (2009) indicated the limited predictive ability of cultural dimensions in justifying Americans, Chinese and Spanish university students' entrepreneurial intentions.

Evidently, Hofstede's (1980, 2001) cultural dimensions scores are country level based. However, the present study is an attempt to examine these dimensions at the individual level. The researcher underlying argument is in consonance with Morales and Holtschlag (2013) who emphasizes that not always individuals brought up and living in a country – in our case Egypt and UK- will exhibit their home country dominating cultural values. Since, an individual nationality does not necessarily mean that s/he is identified with only one culture. Given the increased level of mobility, global migration that allow many people to have dual nationality nowadays and get highly exposed to many other different cultures (Berry, 2011). Accordingly, individuals' cultural values, as opposed to country-level ones, may reveal different effects towards entrepreneurial intention and behavior within the two countries under investigation.

Therefore, based on the above literature and Hofstede's classification of both Egypt and UK cultural values, the following hypothesis is anticipated:

H5: There are significant differences between Egyptian and Scottish students with respect to individual cultural values as follows:

- a- power distance - PD*
- b- uncertainty avoidance - UA*
- c- masculinity - MAS*

2.3 Theory of Planned Behaviour, Entrepreneurial Intentions and Cultural Values

Some scholars reported the influence of national culture on TPB predictors and entrepreneurial intentions in different countries namely: attitude (e.g. Beeka and Rimmington, 2011; Farrukh *et al.*, 2019), perceived behavioral control (e.g. Farrukh *et al.*, 2019), and subjective norms (Autio, Pathak and Wennberg, 2013; George and Zahra, 2002; Stephan and Uhlaner, 2010; Farrukh *et al.*, 2019). Whereas, few studies recognized the moderation effect of culture on the relation between TPB predictors and entrepreneurial intentions. For instance, Mitchell *et al.* (2000) reported the moderation effect of power distance on the relation between entrepreneurial capability-related cognitive constructs and entrepreneurial decisions. Likewise, Valliere (2014) revealed the moderation effect of cultural values on the relation between individuals' attitude, social norms, perceived behavioural control and entrepreneurial intentions. The researcher asserted that culture plays vital role in shaping individuals' entrepreneurial attitudes. Accordingly, it either paves or hinder the road for entrepreneurial behavior. In the same vein, Liñán and Chen (2009), in their cross-national study in Spain and Taiwan, found that uncertainty avoidance moderates the relation between entrepreneurial self-efficacy and entrepreneurial intentions. Yet, the authors failed to establish the moderating effect of individualism/collectivism on subjective norms - entrepreneurial intentions relationship. Hence, based on the literature, the following hypotheses are established:

H6-a Individual cultural values (i.e. PD, UA, MAS) moderate the relation between Egyptian and Scottish students' attitudes towards entrepreneurship, subjective norms, perceived behavioral control and entrepreneurial intention

H6-b Nationality moderates the relation between Egyptian and Scottish students' attitudes towards entrepreneurship, subjective norms, perceived behavioral control and entrepreneurial intention

3. Research Methodology

3.1 Conceptual Model

Figure 1 depicts the study conceptual model and the hypothesized relations. It emphasizes the theory of planned behavior predictors (i.e. attitude, subjective norms and perceived behavioral control) as antecedents to entrepreneurial intention. In addition, nationality and cultural values (i.e. power distance, uncertainty avoidance and masculinity) appear as moderators between TPB predictors and entrepreneurial intention. The researcher examined and compared the above-mentioned relations in both developing and developed contexts namely: Egypt and Scotland, UK respectively.

3.2 Sample and Data Collection

The literature underscored that university students have been widely used as a sample in entrepreneurship research (e.g Litzky et al., 2020; Entrialgo and Iglesias, 2020; Shahab *et al.*, 2019; Do and Dadvari, 2017; Maresch *et al.*, 2016).

Accordingly, the current research population consists of undergraduate business school students in their third and fourth year in two major public universities. The first one located in Cairo, Egypt with a population of 2000 students in the English section, while the other is in Scotland, UK with a population of 595 students. Both countries were chosen as the earlier represents the Arab cluster, which is highly under-researched in the

entrepreneurship field. Whereas, the latter represents the European cluster (Hofstede, 1980).

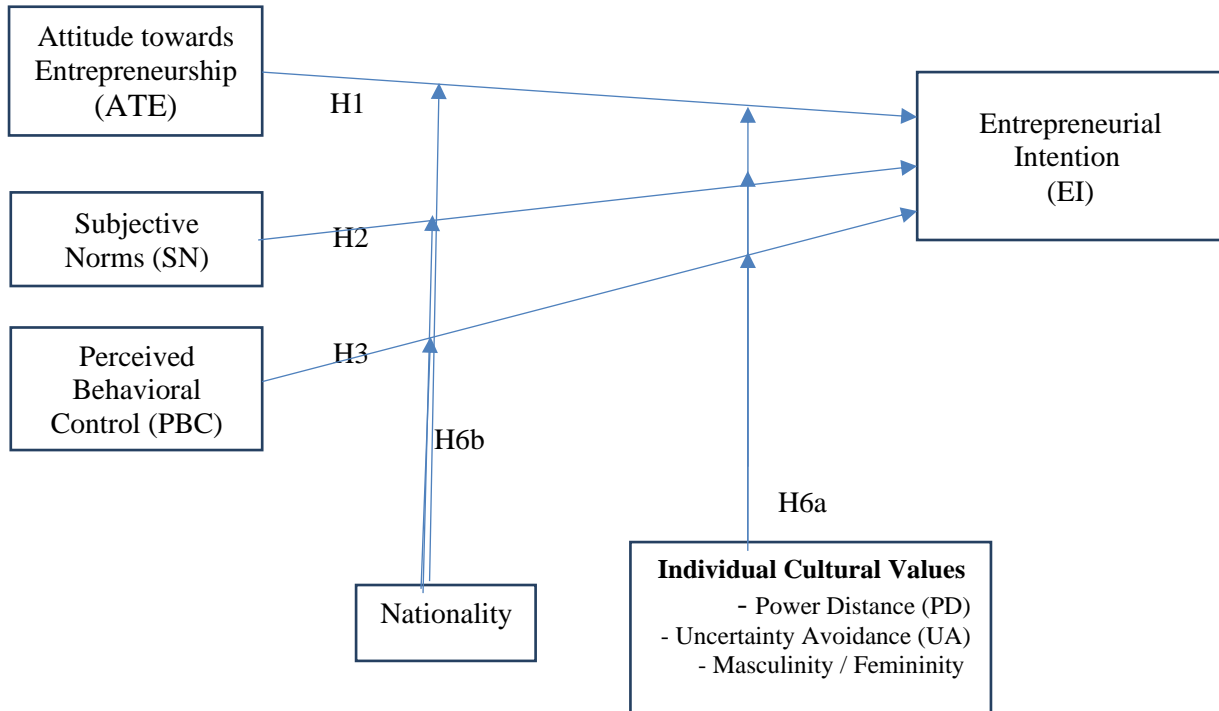


Figure 1. Conceptual Model

The data collected allowed for comparison between the two clusters. In both cases, the students filled in the questionnaire voluntarily. Where, self-administered questionnaire was used to collect data from a convenience sample of 243 Egyptian student. the questionnaire was completed during class time using paper and pencil. However, in Scotland, UK case, a Web-based survey was administered, where a link to the survey was mailed to 585 students, from which 159 were completed, yielding 27% response rate.

3.3 Measures

To Examine the research hypotheses, the researcher adapted measurement scales from the preceding literature. Entrepreneurial intentions were measured using six-item scale developed by Liñán and Chen (2009). An example item reads: "I'm determined to create a firm in the future". Attitude towards entrepreneurship, subjective norms, and perceived behavioral control were measured using five-item scale, three-item scale, and six-item scale respectively developed by Liñán and Chen (2009). In addition, cultural values scale was measured using five-item scale measuring Power Distance, another five-item scale measuring Uncertainty Avoidance, and four-item scale measuring Masculinity respectively developed by Yoo *et al.* (2011). All items used 5-point Likert scale anchored from 1 "strongly disagree" to 5 "strongly agree".

Back translation method was applied to ensure questionnaire consistency, and to validate the interpretation of the scales used. Whereas, the questionnaire was developed in English then translated into Arabic, and back again into English by the researcher and a bilingual translator. Prior to final distribution, the research instrument was pre-tested on 30 Egyptian respondents and 25 Scottish ones to avoid any ambiguous questions and improve the measurement scales. Accordingly, few statements were modified for further clarification.

The final samples encompassed 243 and 159 valid cases from Egypt and Scotland, UK respectively. Both samples were skewed in favour of female respondents as they represented 69.5 per cent of the Egyptian sample and 62.8 per cent of the Scottish one. Further, 91.7 per cent of the Egyptian students fall between 18 and 22 years old as opposed to 76.7 per cent of the Scottish students. In addition, 21 per cent of the Egyptian students were introduced to entrepreneurship education, as opposed to 72 per cent of their Scottish counterparts who reported being introduced to entrepreneurship education at the university level.

4. Data Analysis and Results

The analysis of the research data was carried out in two steps as recommended by Anderson and Gerbing (1988). First the analysis of the measurement model was conducted, followed by the analysis of the structural model by covariance-based Structural Equation Modeling (SEM) using AMOS 22. Then later, the moderation effect of cultural values and nationality was examined.

4.1 Analysis of the Measurement Model

Confirmatory Factor Analysis (CFA) was undertaken to address the issues of convergent and discriminant validity (Anderson and Gerbing, 1988; Jöreskog and Sörbom, 1993) of the measurement model. The latter encompassed entrepreneurial intention, attitude, subjective norms, perceived behavioral control, power distance, uncertainty avoidance and masculinity.

CFA results yielded the removal of some research constructs items in both Egyptian and Scottish samples due to their low standardized factor loading which was below the minimum recommended cut-off point of .5 emphasized by Hair *et al.* (2010). However, Subjective Norms (SN) and Power Distance (PD) items loaded successfully on their respective factors in both samples. Tables 1 and 2 depict the confirmatory factor analysis results in both research samples. All items loaded successfully on a single factor with a standardized loading equivalent to, or greater than 0.5 with values ranging from .514 to .804 in the Egyptian sample, and .50 to .935 in the Scottish sample at 99 % significant level, hence revealing strong convergent validity.

Further, the reliability of all research constructs was examined using Cronbach's alpha. The values exceeded the minimum recommended value suggested by (Nunnally, 1978; Hair *et al.*, 2010), and the overall alpha value accounted for 0.829 in both samples (see Tables 1 and 2).

Table (1): Confirmatory Factor Analysis and Cronbach Alpha Results for the Measurement Model (Egypt Sample)**Table (2): Confirmatory Factor Analysis and Cronbach Alpha Results for the Measurement Model (Scotland, UK Sample)**

Tables 3 and 4 hereunder highlighted the composite reliability (CR) and the average variance extracted (AVE) for the research constructs in Egypt and Scotland, UK respectively. It was noticed that CR for all research constructs in both samples exceeded the threshold 0.7 suggested by Bagozzi (1994). However, the AVE values were greater than 0.45 as recommended by (Netemeyer *et al.*, 2003). The results confirmed internal consistency and convergent validity.

Table (3): Discriminant and Convergent Validity of the Study Constructs (Egypt Sample)**Table (4): Discriminant and Convergent Validity of the Study Constructs (Scotland, UK)**

The results of the analysis of the measurement model provided satisfactory evidence to proceed further with the analysis of the structural model.

4.2 Analysis of the Structural Model

Structural Equation Modelling (AMOS) version 22 was used to examine the research hypotheses. Number of fit indices and from different classes were used to assess the overall models fit and to overcome the limitations of each index (Marsh, Balla, and Hau, 1996; Jaccard and Wan 1996). Tables 5 and 6, as well as Figures 2 and 3 illustrate the path coefficients and significances for the overall models in both samples under investigation.

Table (5): Path Coefficients and Significances (Egypt Sample)
Table (6): Path Coefficients and Significances (Scotland, UK Sample)

The results showed that Chi-square values of Egypt and Scotland, UK respectively $\{\chi^2/df\}$ (103.831/84; $p = .07$) and $\{\chi^2/df\}$ (125.51/113, $p = .198$) were statistically insignificant at 0.05 level. Whereas, all the fit indices employed have fallen within the recommended range, hence ensuring good models fit. The results came as follows: NFI $\geq .90$ (0.90 and 0.93); CFI ≥ 0.90 (0.97 and 0.99); TLI ≥ 0.90 (0.97 and 0.99); RMSEA ≤ 0.08 (0.03 and 0.02); IFI (0.98 and 0.99); PCFI ≥ 0.60 (0.79 and 0.83) for both Egypt and Scotland, UK respectively.

The results lend support to *H1* where Egyptian and Scottish students' ATE positively and significantly affect their EI as follows ($\beta = 0.697$, $t = 6.523$, $p < 0.001$) and ($\beta = 0.777$, $t = 8.641$, $p < 0.001$). However, contrary to *H2*, SN for students from both samples had insignificant effect on EI. Hence, *H2* was rejected. Further, the structural model provided partial support to *H3*, where PBC positively and significantly influences Egyptian students' EI only ($\beta = 0.18$, $t = 2.492$, $p < 0.01$), while insignificant result was observed among their Scottish counterparts.

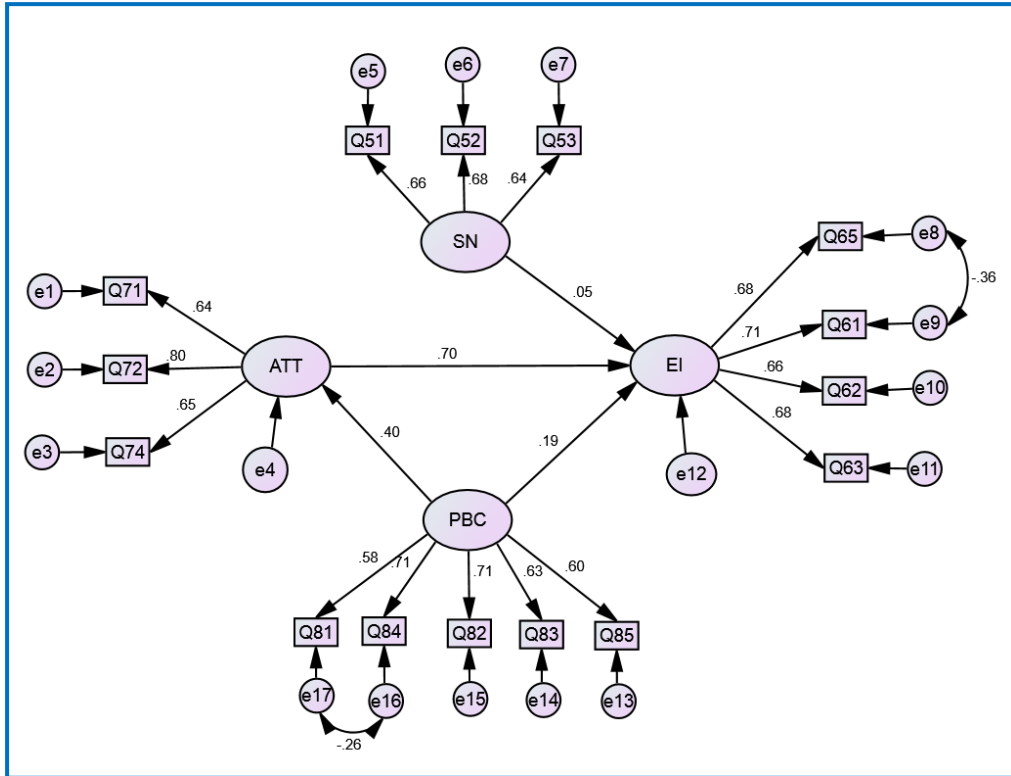


Figure 2. Structural Model for Egypt

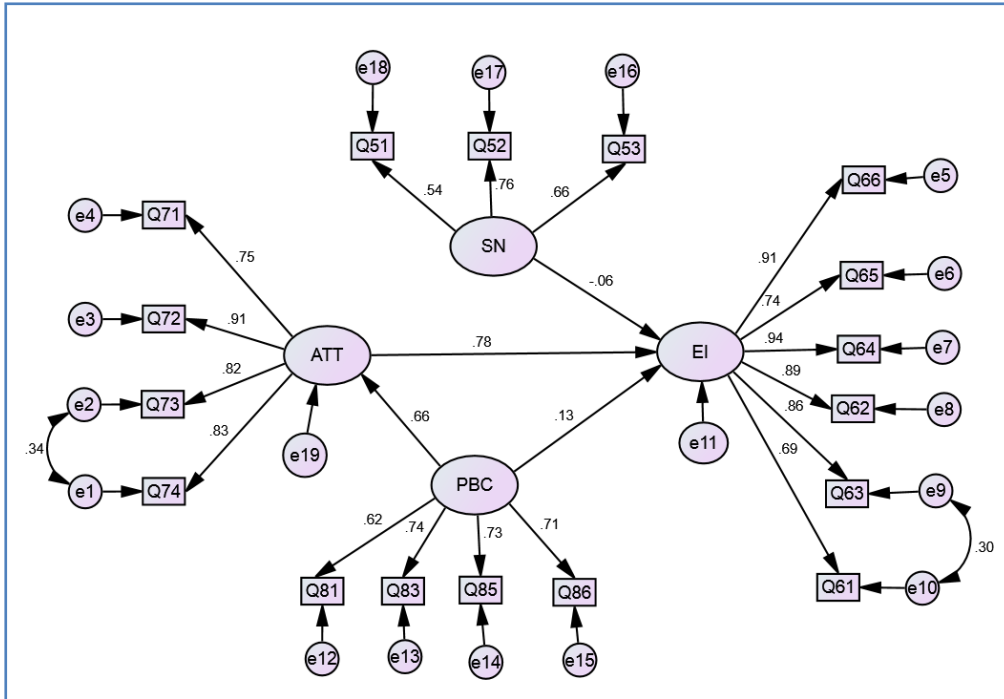


Figure 3. Structural Model for Scotland, UK

T-test was conducted to examine *H4* and *H5*. The results revealed no significant differences between Egyptian and Scottish students with respect to TPB cognitive predictors, yet significant differences were realized regarding EI and individuals' cultural values namely: power distance, uncertainty avoidance and masculinity. Accordingly, *H4* was partially supported while full support was given to *H5* (see Table 7).

Table (7): The Differences between Egyptian and Scottish, UK Students with Respect to TPB Predictors, Entrepreneurial Intentions and Cultural Values

4.2.1 Moderating Effects of Individuals Cultural Values

In order to examine the moderating effect of individuals cultural values on the relation between attitudes towards entrepreneurship, subjective norms and perceived behavior control and entrepreneurial intentions, a multi-group analysis was conducted using AMOS 22. The significant/non-significant differences in the Chi-square values between the unconstrained model and the constrained one determine the existence/non-existence of the moderation effect.

The two samples of the Egyptian and the Scottish students were divided into two groups using the median score of the respondents with respect to each cultural value moderator (i.e. power distance; uncertainty avoidance; masculinity/femininity). Respondents below the median point represent those who score low on a cultural value and vice versa.

The results show significant relation between ATE and EI among respondents with low and high levels of PD, UA and MAS among Egyptian and Scottish students. In addition, PBC has significant relation with EI among Egyptian students with low levels of PD, Scottish students with high levels of UA, and Egyptian and Scottish students with high levels of MAS. Finally, SN have significant negative relation with EI among Scottish students with low levels of PD (see **Tables, 8, 9, 10, 11, 12 and 13**).

However, despite the strengths of these dependencies the results show insignificant moderation effect of individual cultural values in the relation between TPB cognitive predictors and EI among Egyptian and Scottish students. Thus, *H6a* has not been supported (see **Tables (8, 9, 10) and Tables (11,12, 13)**).

Following the same procedure, the moderating effect of nationality on the relationship between TPB cognitive predictors and Egyptian and Scottish students' EI was calculated. The result indicates the existence of significant moderation in both samples

(see Table 14). Though the path coefficient for ATE among Egyptian students was greater than their Scottish counterparts. In addition, significant moderation effect was emphasized in the relation between PBC and Scottish students' EI only. Yet, insignificant moderation results were underscored in the relation between SN and EI among students from both samples under investigation. Thus, *H6b* is partially supported.

Table (14): Moderating effect of Nationality Among TPB Predictors and Entrepreneurship Intention

5. Discussion and Conclusions

The purpose of this study is to examine the moderating role of individual cultural values and nationality on the relation between TPB cognitive predictors and entrepreneurial intent among Egyptian and Scottish university students.

The current research reveals some interesting results. To commence with, the Egyptian students unearth significant positive attitude and perceived behavioral control towards entrepreneurial intent. These results imply that being an entrepreneur entails great advantages and satisfactions to them. In addition, they have confidence in themselves in developing an entrepreneurial project, starting a viable firm, and controlling the creation process. These results are in consonance with the literature where Maresch *et al.* (2016) and Aleksandrova *et al.* (2020), among others, reached the same outcome among Austrian university students and Russian's adult population respectively.

Meanwhile, attitude appears to be the only antecedent that positively affect UK students' entrepreneurial intent. This result implies that they are attracted to pursue an entrepreneurship career whenever the window of opportunity is open. This is consistent with previous studies such as Shahab *et al.* (2019), who found same result among Chinese and Spanish university students; likewise, Do and Dadvari (2017) reported similar conclusion among Taiwanese university students. Even, Spanish

university academics stated the same result as highlighted by (Miranda *et al.*, 2017).

However, regarding the effect of subjective norms on entrepreneurial intention, the literature was far beyond coherent. Accordingly, the current study shows insignificant association between SN and entrepreneurial intention among Egyptian and Scottish university students. The result is corresponding to Esfandiar *et al.* (2019) outcome concerning the Iranian university students and Aleksandrova *et al.* (2020) conclusion regarding Russian's adult population. This result could be interpreted considering previous studies conclusion *vis-a-vis* the positive correlation between attitude and subjective norms (e.g. Maresch *et al.*, 2016; Schlaegel and Koenig, 2014), as well as between perceived behavioral control and subjective norms (e.g. Entrialgo and Iglesias, 2020). So, SN effect on entrepreneurial intention *per se* might be obscured in its indirect association with both attitude and perceived behavioral control.

In addition, the result indicates that individual cultural values (PD, UA, MAS) do not moderate the relation between TPB cognitive predictors and entrepreneurial intentions among respondents from both countries, however, nationality does. This result points out that it would be better to perceive culture from a holistic perspective that embraces nationwide instead of comprehending it at the individual level. This is in consonance with Hofstede (1983) who stressed on the significance of nationality in people's lives, that makes them psychologically connected with their national culture.

The above result could be interpreted considering number of scholars who have reported that national culture moderates the differences between national groups in terms of reasoning and behaviors (e.g. Hofstede, 2001; House *et al.*, 2004; Schwartz, 1999; Trompenaars and Hampden-Turner, 1998; Pruett *et al.*, 2009; Iakovleva *et al.*, 2011; Bogatyreva *et al.*, 2019; Litzky *et al.*, 2020).

The literature hypothesized that “entrepreneurship is facilitated by cultures that are high in individualism, low in uncertainty avoidance, low in power-distance, and high in masculinity” (Hayton *et al.*, 2002, p.34). Further, according to Hofstede’s cultural dimensions, Egypt and United Kingdom are ranked as follows: Individualism - IDV - (25) (89), Uncertainty Avoidance – UA (80) (35), Power Distance - PD (70) (35), and Masculinity - MAS (45) (66) respectively (Hofstede Centre, 2015).

Following this hypothesis, UK culture index reflects the ideal context to foster and facilitate entrepreneurship as opposed to the Egyptian one. However, the results show that nationality moderates the relation between Egyptian and Scottish, UK students’ attitude towards entrepreneurship and their entrepreneurial intent, with the Egyptian students’ recording higher level of attitude compared to their counterparts. This outcome contradicts Hofstede (2015) hypothesis regarding categorizing some cultures as more liable and prepared to foster entrepreneurship as opposed to others. In addition, this effect could also be interpreted considering the scarcity of available job opportunities for fresh graduates in Egypt, a status which undergraduates are aware of. Hence, they get themselves prepared and equipped with the skills and knowledge needed to start up their own business. This result is in consonance with GEM (2017-2018) where 42.7% of early stage entrepreneurs remain motivated by necessity instead of opportunity due to the absence of work alternatives.

In addition, nationality also moderates the relation between Scottish, UK students perceived behavioral control and their entrepreneurial intention. This result reflects the high percentage of UK students (72 per cent) who are introduced to entrepreneurship education at the university level as opposed to their 21 per cent Egyptian counterparts. Such result confirms GEM (2017-2018) report that ranked Egypt at the bottom of all GEM countries participated in the longitudinal study (65 country)

for both school, college and university levels entrepreneurship education in 2016 and 2017. Consequently, UK students are aware of the necessary practical details to start a firm which in turn make them in control of the creation process, well prepared to start up their own business, in addition they believe in themselves and their ability to succeed in case they started up a business.

This research contributes to the methodological progression of entrepreneurial cognitive research by studying the moderation effect of individuals cultural values and nationality on the relation between TPB predictors and entrepreneurial intention. The study incorporates different cultural orientations in the research model namely: power distance, uncertainty avoidance and masculinity/femininity. Further, it provides extensive empirical support to the applicability of TPB to entrepreneurship research, particularly after examining it on two-country sample namely Egypt and Scotland, UK.

6. Implications

The current study emphasizes the magnitude of individual's attitude towards entrepreneurship and perceived behavioral control as motivational factors fostering entrepreneurial intent. Consequently, these motivational factors should be encouraged and embedded in entrepreneurship courses. Particularly that both factors are subject for change and development over time as highlighted by (Wakkee *et al.*, 2010).

Although the current study did not statistically examine the relation between entrepreneurship education and entrepreneurial intent, yet the high percentage of Scottish students who were introduced to such type of education may have some influence on the results. Accordingly, it is suggested that entrepreneurship courses should be application based where students can acquire, develop and enhance their entrepreneurial skills, knowledge and intentions. In addition, guest speakers and successful entrepreneurs should be invited to entrepreneurship classes as they may act as influential leaders to

encourage students and make them more confident to become entrepreneurs.

Furthermore, entrepreneurial programs should consider national culture since it is recognized as a significant moderator between some TPB predictors and entrepreneurial intent, particularly with respect to attitude towards entrepreneurship and perceived behavioral control.

7. Limitations and Future Research

This study has few limitations that should be acknowledged. First, as this research is cross sectional one that investigated undergraduate students' entrepreneurial intentions. It would be reasonable to continue the research and investigate whether this intention turned into actual behavior and a real start-up after graduation or not. Accordingly, it is suggested that a longitudinal study should take place to examine students at different points before and after graduation.

In addition, although respondents included in this research were business students only enrolled in public universities either in Egypt or Scotland, UK. The researcher believes that entrepreneurship is an interdisciplinary field that should not be restricted to business students, hence future research should include students registered in private universities and in other fields of studies (e.g. science, engineering) with the aim of promoting and encouraging entrepreneurship education that allows students to think creatively, innovatively and outside the box.

8. References

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Table (1): Confirmatory Factor Analysis and Cronbach Alpha Results for the Measurement Model (Egypt Sample)

Constructs	Factor loading	R-square	P-value	Cronbach Alpha
Subjective Norms (SN) (3)				.70
SN1	.661	0.437	***	
SN2	.684	0.468	***	
SN3	.645	0.416	***	
EI (6)				.76
EI 1	.714	0.510	***	
EI 2	.659	0.434	***	
EI 3	.680	0.462	***	
EI 5	.683	0.466	***	
ATE (5)				.74
ATE1	.644	0.415	***	
ATE2	.804	0.646	***	
ATE4	.652	0.425	***	
PBC (6)				.77
PBC1	.584	0.341	***	
PBC2	.710	0.504	***	
PBC3	.631	0.398	***	
PBC4	.710	0.504	***	
PBC5	.600	0.360	***	
PD (5)				.80
PD1	.672	0.452	***	
PD2	.708	0.501	***	
PD3	.782	0.612	***	
PD4	.539	0.291	***	
PD5	.654	0.428	***	
UA (5)				.78
UA2	.568	0.323	***	
UA3	.700	0.490	***	
UA4	.752	0.566	***	
UA5	.765	0.585	***	
MAS (4)				.70
MAS1	.514	0.264	***	
MAS2	.649	0.421	***	
MAS3	.700	0.490	***	

Note: SN - social norms; EI - entrepreneurial intention, ATT - attitude; PBC - perceived behavioral control; PD - power distance; UA - uncertainty avoidance; MAS - masculinity

*** $p < 0.001$

Table (2): Confirmatory Factor Analysis and Cronbach Alpha Results for the Measurement Model (Scotland Sample)

Constructs	Factor loading	R-square	P-value	Cronbach Alpha
Subjective Norms (SN) (3)				.70
SN1	0.544	0.296	***	
SN2	0.765	0.585	***	
SN3	0.658	0.433	***	
EI (6)				.94
EI 1	0.694	0.482	***	
EI 2	0.893	0.797	***	
EI 3	0.857	0.734	***	
EI 4	0.935	0.874		
EI 5	0.741	0.549	***	
EI 6	0.913	0.834		
ATE (5)				.90
ATE1	0.746	0.557	***	
ATE2	0.908	0.824	***	
ATE3	0.816	0.666		
ATE4	0.829	0.687	***	
PBC (6)				.79
PBC1	0.619	0.383	***	
PBC3	0.740	0.548	***	
PBC5	0.735	0.540	***	
PBC6	0.712	0.507	***	
PD (5)				.77
PD1	0.500	0.213	***	
PD2	0.560	0.314	***	
PD3	0.784	0.615	***	
PD4	0.716	0.513	***	
PD5	0.674	0.454	***	
UA (5)				.80
UA2	0.708	0.501	***	
UA3	0.838	0.702	***	
UA4	0.609	0.371	***	
UA5	0.716	0.513	***	
MAS (4)				.76
MAS1	0.725	0.526	***	
MAS2	0.694	0.482	***	
MAS3	0.729	0.531	***	

Note: SN - social norms; EI - entrepreneurial intention, ATT - attitude; PBC - perceived behavioral control; PD - power distance; UA - uncertainty avoidance; MAS – masculinity *** $p < 0.001$

Table (3): Correlation Coefficients among the Constructs and Discriminant and Convergent Validity of the Study Variables (Egypt Sample)

	Mean	SD	CR	AVE	SN	EI	ATT	PBC	PD	UA	MAS
SN	4.03	.696	.702	.440	1						
EI	3.68	.927	.779	.468	.013	1					
ATE	3.58	.924	.744	.495	.016	.360**	1				
PBC	2.85	.838	.783	.421	.001	.143**	.108**	1			
PD	2.38	1.006	.806	.457	.001	.003	.001	.052**	1		
UA	3.86	.8549	.792	.491	.014	.070**	.090**	.015	-.004	1	
MAS	2.83	1.063	.655	.392	-.002	.014	.006	.067**	.051**	.011	1

Notes: CR > 0.70, AVE > 0.5, ** correlation is significant at the 0.01 level (2-tailed), * correlation is significant at the 0.05 level (2-tailed), SN - social norms; EI - entrepreneurial intentions, ATE – attitude towards entrepreneurship; PBC - perceived behavioral control; PD - power distance; UA - uncertainty avoidance; MAS - masculinity

Table (4): Correlation Coefficients among the Constructs and Discriminant and Convergent Validity of the Study Variables (Scotland Sample)

	Mean	SD	CR	AVE	SN	EI	ATT	PBC	PD	UA	MAS
SN	4.057	.6315	.697	.438	1						
EI	3.080	1.0374	.936	.712	.001	1					
ATE	3.609	.9491	.896	.684	.002	.624**	1				
PBC	2.945	.8148	.796	.494	.001	.331**	.320**	1			
PD	1.819	.6438	.779	.422	-.011	.005	-.001	.005	1		
UA	3.692	.5988	.812	.522	.009	-.003	-.003	-.001	.001	1	
MAS	1.720	.8174	.759	.513	-.040*	.001	-.003	.001	.215**	.006	1

Notes: CR > 0.70, AVE > 0.5, ** correlation is significant at the 0.01 level (2-tailed), * correlation is significant at the 0.05 level (2-tailed), SN - social norms; EI - entrepreneurial intentions, ATE – attitude towards entrepreneurship; PBC - perceived behavioral control; PD - power distance; UA - uncertainty avoidance; MAS - masculinity

Table (5): Path coefficients and significances (Egypt Sample)

HP	Structural Paths	Path Coefficient	t-value	P	
HP1	Attitude →EI	.697	6.523	***	Accepted
HP2	Subjective norms →EI	.053	.813	.416 ^{ns}	Rejected
HP3	Perceived behavioral control →EI	.186	2.492	.013*	Accepted

Model Fit indices:
 $\{\chi^2/df$ (103.831/84; $p = .07$); NFI (.90); CFI (0.97); TLI (0.97); RMSEA (.03); IFI (0.98); PCFI (0.79)
 *** $p < 0.001$; * $p < 0.01$; ns = not significant

Table (6): Path coefficients and significances (Scotland Sample)

HP	Structural Paths	Path Coefficient	t-value	P	
HP1	Attitude →EI	.777	8.641	***	Accepted
HP2	Subjective norms →EI	-.059	-1.04	.298 ^{ns}	Rejected
HP3	Perceived behavioral control →EI	.128	1.585	.113 ^{ns}	Rejected

Model Fit indices:
 $\{\chi^2/df$ (125.51/113, $p = .198$); NFI (.933); CFI (0.99); TLI (0.99); RMSEA (.02); IFI (0.99); PCFI (0.83)
 *** $p < 0.001$; ns = not significant

Table (7): The Differences between Egyptian and Scottish, UK Students with Respect to TPB Predictors, Entrepreneurial Intentions and Cultural Values

Items	Mean differences	St. Error differences	95% Confidence Interval of the Difference		t- value	Sig. (2-tailed)
			Lower	Upper		
ATE	.02231	.09528	-.16500	.20962	.234	.815 ^{ns}
SN	.02578	.06851	-.10891	.16046	.376	.707 ^{ns}
PBC	.09404	.08461	-.07230	.26038	1.111	.267 ^{ns}
EI	-.60382	.10154	-.80361	-.40404	-5.947	.000 ^{***}
PD	-.56906	.08229	-.73084	-.40728	-6.915	.000 ^{***}
UA	-.16952	.07255	-.31214	-.02690	-2.337	.020 ^{**}
MAS	-1.11600	.09411	-1.30102	-.93098	-11.859	.000 ^{***}

ATE – attitude towards entrepreneurship; SN - social norms; PBC - perceived behavioral control; EI - entrepreneurial intentions, PD - power distance; UA - uncertainty avoidance; MAS - masculinity
^{**} $p < 0.05$. ^{***} $p < 0.001$. ns = not significant.

Table (8): Moderating effect of Power Distance (PD) among Egyptian Students

		Coefficient (Median point 2.2)					
Hypothesis	Structural Path	Low PD (n =114)		High PD (n =129)			
	ATE → EI	.729***		.616***			
	SN → EI	-.051 ^{ns}		.170 ^{ns}			
	PBC → EI	.254**		.100 ^{ns}			
		Goodness of fit statistics					Results
Model	χ^2	df	P-value	CFI	NFI	RMSEA	
Unconstrained	247.743	168	.000	.923	.801	.044	
Constrained	262.676	183	.000	.923	.789	.043	
Difference	14.933	15	0.456 ^{ns}				Not Significant at 0.05

** $p < 0.05$; *** $p < 0.001$; ns = not significant.

Table (9): Moderating effect of Uncertainty Avoidance (UA) among Egyptian Students

		Coefficient (Median point 4)					
Hypothesis	Structural Path	Low UA (n =110)		High UA (n =133)			
	ATE → EI	.655***		.674***			
	SN → EI	-.016 ^{ns}		.063 ^{ns}			
	PBC → EI	.086 ^{ns}		.267**			
		Goodness of fit statistics					Results
Model	χ^2	df	P-value	CFI	NFI	RMSEA	
Unconstrained	218.625	168	.005	.948	.817	.035	
Constrained	232.533	183	.008	.950	.805	.034	
Difference	13.908	15	0.533 ^{ns}				Not Significant at 0.05

** $p < 0.05$; *** $p < 0.001$; ns = not significant.

Table (10): Moderating effect of Masculinity (MAS) among Egyptian Students

		Coefficient (Median point 3)					
Hypothesis	Structural Path	Low MAS (n =116)			High MAS (n =127)		
	ATE → EI	.933 ^{***}			.526 ^{***}		
	SN → EI	-.045 ^{ns}			.116 ^{ns}		
	PBC → EI	-.006 ^{ns}			.305 [*]		
		Goodness of fit statistics					Results
Model	χ^2	df	P-value	CFI	NFI	RMSEA	
Unconstrained	200.939	168	.042	.966	.828	.029	
Constrained	214.794	183	.054	.967	.816	.027	
Difference	13.855	15	0.537				Not Significant at 0.05

* $p < 0.01$; *** $p < 0.001$; ns = not significant.

Table (11): Moderating effect of Power Distance (PD) among Scottish Students

		Coefficient (Median point 1.8)					
Hypothesis	Structural Path	Low PD (n =69)			High PD (n =90)		
	ATE → EI	.826 ^{***}			.724 ^{***}		
	SN → EI	-.169 ^{**}			.062 ^{ns}		
	PBC → EI	.051 ^{ns}			.209 ^{ns}		
		Goodness of fit statistics					Results
Model	χ^2	df	P-value	CFI	NFI	RMSEA	
Unconstrained	291.919	226	.002	.963	.859	.043	
Constrained	305.806	243	.004	.965	.852	.041	
Difference	13.887	17	0.675				Not Significant at 0.05

** $p < 0.05$. *** $p < 0.001$. ns = not significant.

Table (12): Moderating effect of Uncertainty Avoidance (UA) among Scottish Students

		Coefficient (Median point 3.75)					
Hypothesis	Structural Path	Low UA (n =65)	High UA (n =94)				
	ATE → EI	.729***	.811***				
	SN → EI	.068 ^{ns}	-.072 ^{ns}				
	PBC → EI	.125 ^{ns}	.113 ^{ns}				
		Goodness of fit statistics					Results
Model	χ^2	df	P-value	CFI	NFI	RMSEA	
Unconstrained	313.398	226	.000	.952	.850	.050	
Constrained	334.587	243	.000	.949	.840	.049	
Difference	21.189	17	0.218				Not Significant at 0.05

*** $p < 0.001$. ns = not significant.

Table (13): Moderating effect of Masculinity (MAS) among Scottish Students

		Coefficient (Median point 1.34)					
Hypothesis	Structural Path	Low MAS (n =59)	High MAS (n =100)				
	ATE → EI	.889***	.716***				
	SN → EI	-.039 ^{ns}	-.066 ^{ns}				
	PBC → EI	-.035 ^{ns}	.218**				
		Goodness of fit statistics					Results
Model	χ^2	df	P-value	CFI	NFI	RMSEA	
Unconstrained	269.751	226	.024	.975	.866	.035	
Constrained	282.076	243	.043	.978	.860	.032	
Difference	12.325	17	0.780				Not Significant at 0.05

** $p < 0.05$. *** $p < 0.001$. ns = not significant.

Table (14): Moderating effect of Nationality among TPB Predictors and Entrepreneurial Intention

Hypothesis	Structural Path	Coefficient					
		Egyptian (n = 243)	Scottish (n = 159)				
	ATE → EI	.783***	.653***				
	SN → EI	.035 ^{ns}	-.069 ^{ns}				
	PBC → EI	.107 ^{ns}	.271**				
	Goodness of fit statistics					Results	
Model	χ^2	df	P-value	CFI	NFI	RMSEA	
Unconstrained	246.910	168	.000	.965	.899	.034	
Constrained	279.858	183	.000	.956	.885	.036	
Difference	32.948	15	0.005				Significant at 0.05

** $p < 0.05$. *** $p < 0.001$. ns = not significant.

