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Research paper

Mediating Role of E- Learning Resources in Developing Entrepreneurial Inclinations Amongst Undergraduate Students at Universiti Utara Malaysia

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Abstract

In this study the authors tried to identify mediating role of innovation and moderating role of size of enterprise in the relationship Making a living with lawful earnings is possible by working for others, becoming self-employed or employing others. This paper aims at providing insights into the role of structural support and the use of E-learning such as business simulations games in developing entrepreneurial intentions of university students. The underlying theories of experiential learning, constructivist learning theory and bloom's taxonomy are discussed in relation with the objectives of this study. The response of 252 university students from Malaysia was collected through self-administrative survey using simple random sampling technique. The results of PLS-SEM demonstrate a significant positive impact of E-learning resources and perceived structural support from Government in developing entrepreneurial inclinations of students at Universiti Utara Malaysia (UUM). The present study provides an overview and highlight the role assumed by the institutions of higher education through adoption of E-learning resources in order to nurture entrepreneurship among young generation. Additionally, keeping in view the role of higher education in socio-economic development, recommendations have also been proposed for universities and policy makings institutions to cope with the current challenges of higher education. The findings of this study have important implications of enhancing entrepreneurial capacity in Malaysia.

Keywords Entrepreneurship, Innovation, Micro and small enterprises, Performance, Risk taking.

1. Introduction

The role of entrepreneurship has now been recognized worldwide including Malaysia. Entrepreneurial activities are now been considered as engine to create employment oppertunities, especially among the young populatio in Malaysia (Rengiah & Ilham Sentosa, 2015). Consequently, self-employement can help fresh graduates to grow themselves by easing the current unemployment Milieu (Moberg et al., 2014). Entrepreneurship was acknowledged by many researchers as a solution to the problem of unemployed graduates (Kamariah, Yaacob, & Jamaliah, 2004; Salmah & Maryanah, 2006). Universities have now started offering formal entrepreneurship education at bachelors and masters level. The objective if these programs is to provide practical experience through organising seminars, conferences, virtual learning activities, business simulations games and training for the students (Crookall, 2010). Among several educational aids, use of E-learning resources such as business simulations and games gain attention by teachers through providing theoretical-research perspectives useful for entrepreneurship. These simulations perceived that more involvement in business-related simulations increases a students' inclination to be an entrepreneur—which in turn, provides the base for flourishing entrepreneurial activity in the society (Barišić & Prović, 2014; Keshodarah, 2013; Rengiah Assoc Ilham Sentosa, 2016; Sulaiman Mohammed Lame & Wan Fauziah Wan Yusoff, 2013; Wawer, Miloz, Muryjas, & Rzemieniak, 2010). Universities are a major source of preparing entrepreneurs. Rapid and drastic changes in economic growth and sustainability are creating higher demands for employability skills in the workforce as labor market is becoming more competitive and depends more on quality of knowledge and skills as the globalization come across in all industry. The major issue is the compatibility of education with the corporate sector and possible employers. Keeping in view the problems facing by business schools, having practical experience is an essential qualification for securing a position being graduated (Keshodarah, 2013) Accordingly, business simulations as E-learning and gaming that would be both pedagogical useful and provide theoretical-research perspective conceived as a useful tool for entrepreneurship (Noor, Shariff, Shabbir, Shukri, & Bakar, 2018; Faisal, Shabbir, Javed, & Shabbir, 2016).

Entrepreneurship is shaped by political, contextual and economic actors governed by many factors in the economy (Gelard & Saleh, 2011).The participation and support of stakeholders are vital to boost entrepreneurial activities in the economy (Obaji, 2014). Stakeholders that can support the entrepreneurs include Govern-

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ment, family of nascent entrepreneurs, and financial institutions (Gelard & Saleh, 2011). To survive in that system, entrepreneurs may identify opportunities and face theatres. For example, if there are some attractive opportunities and favourable conditions are there in the market, entrepreneurs will definitely be encouraged for entrepreneurship (Gelard & Saleh, 2011). According to the study conducted by Frank et al. (2003), the perceived barriers and structural support from financial institutionds are the factors that directly influence the entrepreneurial intents. Likewise, availability of business resources and capabilities enable the nascent entrepreneurs to start a business confidently (Obaji, 2014). Structural support from Government like offering loan and prioviding support can assist nascent entrepreneurs to perform even at international level (Shabbir, Shariff, Salman, & Shabbir, 2017; Shabbir, Shariff, & Shahzad, 2016b, 2016a; Shabbir et al., 2016a; Shahzad, Shabbir, & Shariff, 2016).

2. Literature Review

The structural support is one of the stakeholder's support system which is same as subjective norms presented in the Theory of Planned Behavior (Ajzen, 1992). In line with the theory of planned behavior (Ajzen, 1991), which establishes that the subjective norm or structural support have an impact on entrepreneurial inclinations (Shabbir, Shariff, Salman, & Shabbir, 2017) (Ajzen, 1991; Shabbir, Shariff, Alshaibani, Faisal, & Salman, 2018) . In light of the above, this study assumed that structural support system stimulates entrepreneurial inclinations. Therefore, this study suggested that:

H1: Structural support has a positive effect on entrepreneurial inclinations of the students taking a basic entrepreneurship course at Universiti Utara Malaysia. H2: Structural support has a positive effect on business simulations of the students taking a basic entrepreneurship course at Universiti Utara Malaysia

Business Simulations :The usage of business simulations in enhanced student's learning experience can be located into early 1960s (Craft, Kibbee, & Nanus, 1961). Business simulation was explained by Thavikulwat (2009) as "A simulation is an exercise involving reality of function in an artificial environment, a case study but with the participants inside". "Simulation games are one very efficient and practical tool to improve the human integration Dimension. This means both integration among different people working in the same business process chain and integration between the human and the IT systems." (Savolainen, 1997, p. 221).

Business simulations enable students to discover, envision and to articulate explanations for complicated phenomena in easily comprehendible. The importance and impact of experiential learning and business simulations had been widely discussed in the research literature on the subject. Application of experiential learning tools and business simulations in teaching and learning can enable students in acquiring the skills and competencies required in work place. Table 1 is aimed at providing an insight on some basic principles of good pedagogical approach in game and Business simulations environment.

Table 1:. Principles of pedagogical approach in Simulations and game environment

PrinciplesDescription Applications in Simulations

Individualization Learning should be tailored to need of the individuals Simulation games adapted to level of individual's learnings

Feedback Contextual and Immediate feedback can improve learning and reduce the level uncertainty Simulation games can also provide contextualized and immediate feedback

Active learning Learning should be aimed at engaging learner in an active discovery and creation of knowledge Simulation games can also provide an active milieu which may lead to discovery

Motivation Students are encouraged and motivated while presented with rewarding and meaningful activities Simulation games engage participants for longer periods of engagements in pursuit of goals.

Social

Learning is participatory and social process Simulation games also be played with other games or by involving communities of interested users.

Scaffolding Learners can be steadily challenged with higher levels of difficulty and complexity in progression that will enable them to meet the complexity in an incremental ways. Simulation games are structured in several levels; participants cannot play in higher levels, if he had not shown competence at current level

Transfer Participants can develop the capability to transfer the learning from one location to any other location Simulation games can also allow participants to transmit information from prevailing context to any novel one

Assessment Participants have the chance to assess and evaluate their learning and also can compare the outcome to othersSimulation games can allow participants to gauge their skills and compare with others

Ruohomaki (1995) further added that simulations and simulation games can be illustrious as follows:

•Simulation games are working demonstration on any reality; Simulation games be an abstract, augmented model of any process or simplified version of complex reality. It purports its importance and implication to possess related behavioral resemblance with any original system.

•Simulation game can combine the features and characteristics of any game (rules, cooperation, competition, roles and participates) and which of any simulation (Need to include the critical aspects of reality into simulations). Game will only be classified as simulation games if the rules of that game are near to any model of reality (pp.13-14).

Eilon (1963) for the first time classified business simulation and business simulation games in terms of design and characteristics such as,

•Total functional or enterprise

•Interacting or non-interacting

•Computer based or non-computer based.

Furthermore he proposed that according to expected use it can be classified further as:

•Games and business simulation as an integral part of management training and learning programs.

•Games and business simulations used for increasing sales of new procedures and technologies.

•Used during conducting research on behavior of system, decision making process on any individual and interaction of individual with in a larger group.

Greco, Baldissin, & Nonino, (2013), proposed a Graphical representation regarding set of games and its aspects as shown as figure No. 1.

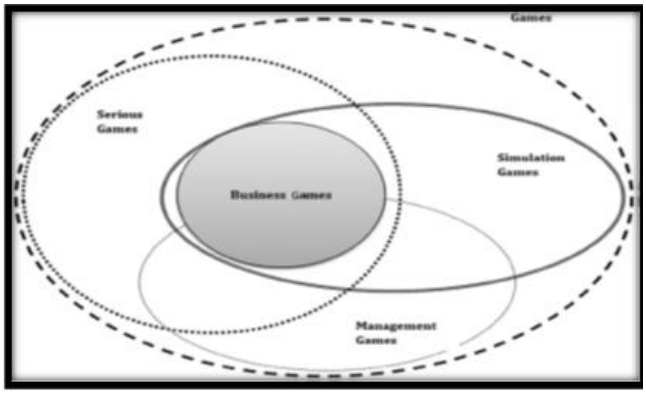


Figure 1:. Graphical representation regarding set of games and its aspects

The aforementioned figure is depicting the various aspects of the simulations of games used for learning complex concepts and techniques through experiential learning. Greco, Baldissin, & Nonino, (2013), proposed that games for learning have multiple aspects which includes management games, serious games, simulation games and business games.

Business simulations should not be perceived as an alternative to traditional pedagogical and instruction techniques used in learning environment, Business simulations are created to support and enrich the learning experience.

H3: Business simulations have a significant effect on entrepreneurial inclinations of the students taking a basic entrepreneurship course at Universiti Utara Malaysia.

H3: Business simulation positively mediate the relationship between Islamic banking and entrepreneurial inclinations of the students taking a basic entrepreneurship course at Universiti Utara Malaysia.

Entrepreneurial Inclinations :Entrepreneurship has widely been recognized as an outcome of a thinking process (Akuetteh, 2009; Busenitz, Gómez, & Spencer, 2014; Business & Master, 2012; Chen & Greene, 1998; Development, 2008; Leitch & Harrison, 1999; Liñán, 2008; Lorz, 2011; Marques, 2010; Mitchelmore & Rowley, 2010; Phelan, Chris & Sharpley, 2014; Sabir, Aidrus, & Bird, 2010; Volkmann et al., 2009; Zhou & Xu, 2012). Nevertheless, the decision to be self-employed is quite complex (Ajzen, 1991; Kolvereid, 1999; Shapero & Sokal, 1982). The decision to become an entrepreneur consists of cognitive processes and careful planning, which is favourably intentional (Ajzen, 1991; Asad, Shabbir, Salman, Haider, & Ahmad, 2018; Shabbir, 2009, 2018). Likewise, inclinations are a robust predictor of behaviour (Ajzen, 1991; Krueger, 1993; Kuratko, 2016) and also logical, especially when the behaviour is rare or comprises of unpredictable time lags (Noor, Shariff, Shabbir, Shukri, & Bakar, 2018; Salman, Arshad, Bakar, & Shabbir, 2018). Moreover, several studies and theories on entrepreneurial inclination e.g., Theory of Planned Behavior (Ajzen, 1991) and Social Cognitive Theory (Bandura, 1977) have also confirmed its ability to predict an individual's future behaviour and recognise a planned intentional behaviour (Ajzen, 1991; Kuratko, 2016; Krueger, 1993).

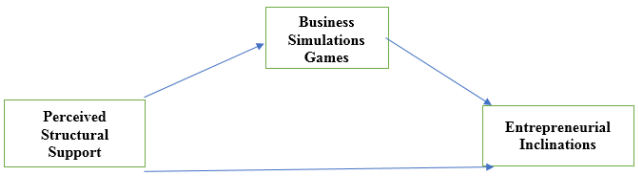


Figure.2: Conceptual Framework

Figure 1 shows the three hypothesised relationships in this study: Islamic banking is the antecedent variable; business simulations is the mediating variable; and entrepreneurial inclinations is the dependent variable.

3. Methodology

3.1 Sample and Data Collection

This study followed a quantitative methodology and adopted a survey research design, which is a method to assess thoughts, feelings, and views about a given situation by collecting primary data from the respondents (Fisher, 2010; Asad, Shabbir, Salman, Haider, & Ahmad, 2018). The degree students at University Utara Malaysia were the targeted population of this study. About 350 students were presented and explained the simulations process as a virtual learning process for entrepreneurship education. A total of 287 questionnaires were returned making the response rate of 74.80%; however, out of the returned questionnaires, only 252 questionnaires were used for further analysis making a valid response rate of 72%. This method was used because out of the 252 questionnaires collected, nine questionnaires were identified as incorrectly filled and thus excluded from further analysis.

3.2 Questionnaire Design

The study was conducted by using a questionnaire form in two languages (i.e., Malay and Mandarin Chinese) to reflect the multilingual society in Malaysia. Research scales were operationalized on the basis of preceding work. Proper modifications were made to fit the current research context and purpose. Structural support was measured using 8 items adapted from Gerald and Saleh (2011). Entrepreneurial inclinations were measured by 15 intention measures adapted from Linan and Chen (2009). Lastly, the business simulations were measured using 18 items adapted from Sorensen (2010).

4. Data Analysis and Results

4.1 Measurement Model

This study primarily employed the composite reliability and Cronbach's Alpha values to measure construct measurement reliability. Furthermore, convergent validity was assessed using items with loadings of more than 0.5 on their respective constructs (Chinomona, 2013).

Table.1: Accuracy Analysis Statistics

Cronbach's Alpha (Frank et al.)	Composite Reliability	Average Variance Extracted
Structural Support	0.82	0.86	0.57
Business Simulations	0.82	0.85	0. 62
Ent. Inclinations	0.84	0.85	0.56

Table 1.2: Discriminant Validity

Business Simulations	Entrepreneurial Inclinations	Structural Support
Business Simulations	0.85	
Entrepreneurial Inclinations	0.79	0.84
Structural Support	0.59	0.57	0.83

Additionally, observed constructs with more than 0.7 outer loading were believed to be acceptable (Haire et al. 2013), Aside this, for this research, the minimum outer loading was accepted more than 0.7. From table 3, the outer loadings of the items were ranged between 0.73 and 0.91. As a result, the proposed model was assumed to be acceptable with adequate reliability, item loadings, discriminant validity and the verification of the research model.

Table 3: Item loadings

Constructs	Items	Loadings	Constructs	Items	Loadings
	SS01	0.77		BS01	0.81
	SS02	0.83		BS02	0.83
Structural	SS03	0.79	Business	BS03	0.77

Support	SS04	0.76	Simulations	BS04	0.8
	SS05	0.86	BS05	0.85	
	SS06	0.84	BS06	0.75	
	SS07	0.91	BS07	0.86	
	SS08	0.93	BS08	0.87	
Entrepreneurial	ENT01	0.92		BS09	0.82
Inclinations	ENT02	0.91		BS10	0.78
	ENT03	0.86	BS11	0.73	
	ENT04	0.87	BS12	0.81	
	ENT05	0.84	BS13	0.83	
	ENT06	0.84	BS14	0.73	
	ENT07	0.81	BS15	0.85	
	ENT08	0.84	BS16	0.83	
	ENT09	0.82	BS17	0.77	
	ENT10	0.87	BS18	0.89	
	ENT11	0.77	ENT12	0.79	
	ENT13	0.82	ENT14	0.74	
	ENT15	0.73			

4.2 Structural Model

A systematic model analysis of the structural model was employed to offer a comprehensive view of the results and to test the Hypotheses from 1 to 4 comprehensively.

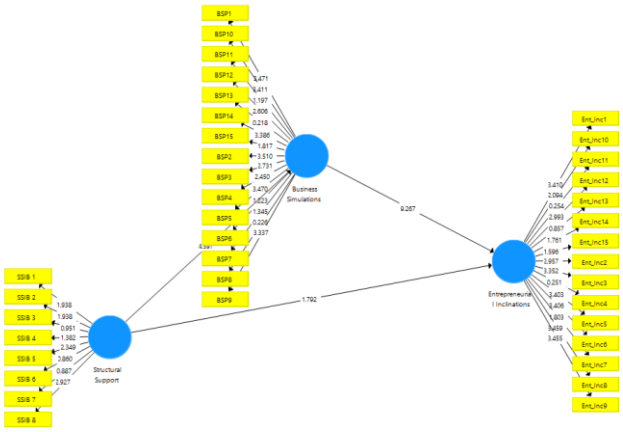


Figure.1: Measurement and Structural Model Results

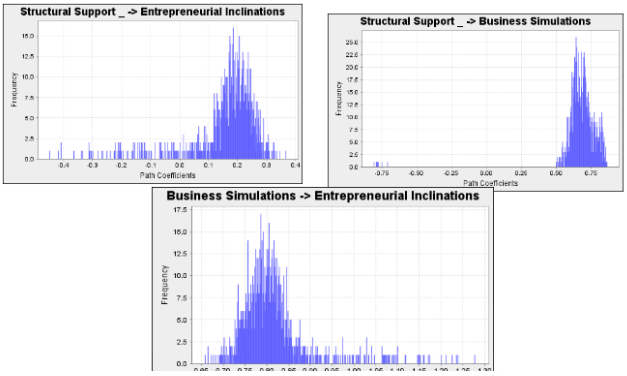


Figure.2: Graphical representation of path coefficient

Based on the PLS-SEM bootstrapping results, Figure 4.1 is showing the path coefficient of the independent variables and the dependent variable. With respect to H1, the results support a significant effect of structural support on business simulation (β0. 78; t=5.70; p> 0.00); so, H1 is accepted. Similarly, the H2 suggests a significant effect of structural support on entrepreneurial inclinations, likewise results provide evidence of significance support of this hypothesised relationship (β 0. 62; t=2.39; p> 0.00); therefore, H2 is also accepted. Furthermore, H3 assumes that there is a positive effect of business simulation on entrepreneurial inclination; the results provide evidence of a significantly positive effect of business simulation on entrepreneurial inclinations (β.70; t=5.43; p< 0.00); therefore, H3 is accepted. The hypotheses H4 suggested the mediating effect of business simulations in the relationship between structural support and entrepreneurial inclinations; the result also provides evidence of this mediating relationship (β.48; t=3.21; p> 0.00); accordingly, H4 is also accepted.

Table 4: Results of Hypotheses Testing

	Hypothesized Path	Path coefficient	Standard Error (STERR)	T Value	P Value	Decision
H1	Business Simulations -> Entrepreneurial Inclinations	0.78	0.08	5.70	0.00	Supported
H2	Structural Support _ -> Business Simulations	0.62	0.14	2.39	0.89	Supported
H3	Structural Support _ -> Entrepreneurial Inclinations	0.70	0.13	5.43	0.00	Supported
H4	Structural Support _ -> Business Simulations -> Entrepreneurial Inclinations	0.48	0.15	3.21	0.00	Supported

As shown in Table 4 and Figure 2 all hypothesized relationships have positive significant relationships and therefore supported.

4.3 Measuring the Effect Size (*f*2)

The *f*2 is the degree of the influence of each exogenous variable on the endogenous variable. When an independent latent variable is deleted from the path model, it changes the value of the coefficient of determination R2 and describes whether the deleted latent exogenous variable has a significant impact on the value of the latent endogenous variable. The *f*2 values with 0.35 considered strong effect), 0.15 as moderate effect, and 0.02 as weak effect (Haire et al. 2013). Table 4 shows the results of effect size for structural support and business simulations games on entrepreneurial inclinations were 0.321, and 0.221, respectively. Accordingly, the *f*2 of all two latent constructs on entrepreneurial inclinations had a moderate effect.

Table 5: Effect Size

Exogenous Variable	Effect Size f2	Total Effect
Structural Support	0.321	Moderate
Business Simulations	0.221	Moderate

5. Conclusions and Recommendations

This study was about the relationship of business simulations games as E*learning approach, structural support system from Government, and entrepreneurial inclinations of the students taking a basic entrepreneurship course at Universiti Utara Malaysia. The findings of this study confirmed a significantly positive relationship between business simulations games and entrepreneurial inclinations of the students taking a basic entrepreneurship course at Universiti Utara Malaysia. The findings of this study are in line with the preceding research, which have recognized business simulations games as active methods of teaching and learning and their value lie in their ability to provide virtual environments for realistic operations to train entreprenerus in decision-making. (Bodea et al., 2015; Cusumano, Kahl, & Suarez, 2008; Garlis & Strazdiene, 2007; Ibrahim, Bakar, Asimiran, Mohamed, & Zakaria, 2015; Tawil, Hassan, Ramlee, & K-Batcha, 2015; Version, 2017; Zegeye, 2013). The findings of this paper are also aligned with studies, which have already been determined effectiveness of business simulations at helping students achieve learning objectives empirically (Barišić & Prović, 2014; Biers et al., n.d.;; Garlis & Strazdiene, 2007; Keat, Selvarajah, & Meyer, 2006; Mustapha & Selvaraju, 2015; Outcome & Trainer, n.d.; Stumpf, Dunbar, &

Mullen, 1991; Sulaiman Mohammed Lame & Wan Fauziah Wan Yusoff, 2013; Tawil et al., 2015; Zegeye, 2013). In terms of pedagogical value, business simulations, therefore, significantly contribute to the development of decision making (Wellington and Faria, 1991). Based on the findings of this paper, it is, therefore, recommended that more business simulation activities increase the inclinations of a person to be an entrepreneur, which in turn, provide the base for flourishing entrepreneurial activity in the society. In addition, it is suggested that Malaysian higher education institutions should facilitate students by providing them hands-on opportunities and help them foster an environment of entrepreneurial spirit.

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