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VALIDATING THE MEASUREMENT OF ENTREPRENEURIAL ORIENTATION

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ABSTRACT. The purpose of this paper is to report on the study carried out in order to develop a valid measure for entrepreneurial orientation, particularly in the context of low-income households in Malaysia. Most previous studies examined the constructs of risk-taking and innovativeness as the components of entrepreneurial orientation; however, a scarce number of researchers focused on other significant attributes of entrepreneurial orientation, such as proactiveness or autonomy. Therefore, this study has examined Creativity and Innovativeness, Risk Taking, Proactiveness, and Autonomy, also presenting an instrument to measure Entrepreneurial Orientation. The study adopted a cross-sectional design, while quantitative data was collected from 800 households across four districts in Kelantan, Malaysia, using structured interviews. Based on the reliability and validity testing, the study finalized the instrument to 17 items yielding four factors, i.e., Creativity & Innovativeness (four items), Risk Taking (three items), Proactiveness (five items), and Autonomy (five items). The findings of the reflective hierarchical model reveal that Autonomy is the highest contributor to entrepreneurial orientation among the low-income households in Kelantan, followed by Proactiveness, Creativity, & Innovativeness, and Risk-Taking. Future researchers could further extend the developed measure by cross-examining the instrument presented in this study across different income-level groups throughout developing and developed nations.

Keywords: Creativity and Innovativeness; Risk Taking; Proactiveness; Autonomy; Entrepreneurial Orientation.

Introduction

Entrepreneurship or entrepreneurial activity refers to the discovery of both available and potential opportunities and subsequently initiating new economic functions by forming new ventures (Reynolds *et al.*, 2005). Entrepreneurship is considered to be a crucial component of economic progress and it signifies its fundamental importance in various ways such as by identifying, assessing and exploiting newer opportunities for businesses, renewing the existing ones or creating new firms, steering the economy's forward by means of innovations, new competencies, job creations and thereby improving the overall welfare of the society (Cuervo *et al.*, 2007). It is much rightly believed that the processes of

entrepreneurship have particularly profound effects on employment and economic growth on the societal level (Baumol, 1996), which perhaps is the reason behind the increased research interest in entrepreneurship during the recent years (Davidsson & Wiklund, 2007).

The notion of entrepreneurs refers to the self-employed people who undertake self-employing entrepreneurial activities as a matter of choice or necessity (Naude, 2008). The latter generally leads to the creation of micro- or small enterprises that usually remain one-person business unit, poorly managed, not always permanent, usually less productive, informal and undercapitalized (Eijdenberg & Masurel, 2013). Such business ventures are extensively popular among low-income and underprivileged communities as a powerful tool for combating poverty and empowering the economically poor (Basargekar, 2011). Moreover, the positive role of small enterprises, particularly that of new ventures, has been widely acknowledged in the development literature, thanks to the crucial role played by micro-enterprises in the socioeconomic development of low-income households along with the support it extends towards maintaining healthy and sustainable economic growth (Al-Mamun, Saufi, & Ismail, 2016).

Entrepreneurship among low-income and underprivileged communities remains to be a popular choice of employment, particularly among developing nations, such as Malaysia. Entrepreneurship has the ability to act as the engine of economic dynamism, particularly in such emerging economies, where a significant proportion of underprivileged micro-entrepreneurs operate within the informal part of the economy (Al-Mamun *et al.*, 2016). Saleh and Ndubisi (2006) disclosed that small to medium enterprises are the most significant contributors towards economic development in Malaysia and perhaps this is why policies and programmes of the Malaysian Government along with the same of development organisations in the country have been nurturing entrepreneurship-friendly environment in order to promote entrepreneurial activities among low-income and underprivileged social groups within Malaysian borders (Al-Mamun & Ekpe, 2016). Entrepreneurial orientation is perceived as the key to growth overall and venture innovations in particular (Hakala, 2013). Basing on preliminary indications regarding external and internal environments of firms, Wiklund and Shepherd (2003) stated that Entrepreneurial Orientation catalyzes firm's actions and thereby helps it to be ahead of competitors. According to Rauch *et al.* (2009), entrepreneurial orientation supports firm's top management in delineating the purpose of organization, in sustaining the firm's vision and thereby in formulating the ways to achieve competitive advantage. Moreover, according to (Dess and Lumpkin, 2005), entrepreneurial orientation has a direct and sustainable effect on firm performance. Furthermore, it is also argued that entrepreneurial orientation facilitates the exploration of innovative opportunities among organizations (Levinthal & March, 1993) and effectively moderates the relationship between knowledge-based resources and firm performance (Dess & Lumpkin, 2005).

Although it is acknowledged that Entrepreneurial Orientation and its attributes have been assessed to some extent in several previous studies including (Levenburg & Schwarz, 2008; Raposo *et al.*, 2008), the literature review revealed there has never been an attempt to assess and validate the construct of Entrepreneurial Orientation at the individual level (Bolton & Lane, 2012), particularly in the context of underprivileged entrepreneurs in developing nations. This indicates that the available today literature does not contain similar research, thus, there is a gap in literature. Moreover, the existing research conveys that entrepreneurial orientation remains to be a construct the composing elements of which can be further granulated (Beattie, 2016). Furthermore, the few existing studies, topically related to the present one, have focused only on certain components of entrepreneurial orientation, such as risk-taking and innovativeness, whereas other significant dimensions of entrepreneurial orientation paradigm, including proactiveness, competitive aggressiveness, autonomy etc., have been mostly neglected (Lumpkin & Dess, 2001; Bolton & Lane, 2012). Thus, it is both

timely and appropriate to develop and validate a more complete and prevalent measure for entrepreneurial orientation in order to facilitate the progress of the related qualitative research.

1. Literature review

1.1. Study Context

A micro-establishment, in Malaysia, is defined as an enterprise having less than five full-time employees or with an annual sales turnover of less than 300,000 Malaysian Ringgit (Department of Statistics, 2016). Small and medium enterprises (SMEs) represent 98.5% of the total business entities in Malaysia, totaling to 907,065 establishments, out of which 76.5% (693,670 establishments) are micro-enterprises who play the backbone of Malaysian economy (SMEE Corp, 2017). Perhaps it is why, the Government of Malaysia works closely with developmental organizations in order to improve the socio-economic condition of low-income households, particularly by formulating core policies as required for enhancing economic growth and minimizing inequality in the distribution of income through entrepreneurship development programs (Al-Mamun *et al.*, 2016). Moreover socio-economic developmental organizations in Malaysia also focus on enhancing entrepreneurial activities among the low-income households by creating micro-enterprises (Al-Mamun *et al.*, 2016). As micro-enterprises operated by low-income households play such significant roles in the economy and reflect are a prime concern for the government and developmental organizations, it is therefore that this study focused on low-income households or micro-entrepreneurs in Malaysia and not other legal forms of businesses.

1.2. Background of Entrepreneurial Orientation

Entrepreneurship can be defined as a “new entry” (i.e., what entrepreneurship consists of), which could be achieved either by entering a new market or by venturing into previously established markets by means of existing or new goods or services, while the term entrepreneurial orientation (EO) could be defined as processing, practicing, and decision-making actions that lead to such new entries (i.e., describing how such a new entry is operationalized) (Lumpkin & Dess, 1996). Child (1972) forwarded the origins of EO from a strategic-choice perspective asserting that new-entry opportunities could be effectively undertaken by "purposeful enactment" (Van de Ven & Poole, 1995). Later, Mintzberg (1973) further articulated that entrepreneurial orientation obtained its roots from the strategy making process related literature and research based on early indications from firms' internal and external environments suggested that EO can expedite a firm's action and thereby aid them to be ahead of the competition (Wiklund & Shepherd, 2003).

The significance of EO lies in its potential to help the firm's top management to delineate the purpose of the organization, sustain firm's vision and formulate a way to achieve competitive advantage over competitors (Rauch *et al.*, 2009). Given that EO provides such attributes to the organization, it has been much explored in models related to firm-level entrepreneurship (Covin & Slevin, 1991; Miller, 1983). Early researches stated that most of the studies of EO had been done in relation to firm performance and have been persistently found to be highly significant in such regards, reflecting 24 percent of performance variance (Bolton & Lane, 2012). However, some researchers confirmed the existence of a direct and sustainable relationship between EO and firm performance, while others articulated that such EO-performance relationship does not play solo, but is instead dependent on the fit between EO and certain other factors such as environment, structure, and strategy. Lastly, a few others indicated that EO plays the moderator and empirically found that the relationship between

knowledge-based resources and performance was stronger among firms with higher levels of EO (Dess & Lumpkin, 2005).

1.3. Components of Entrepreneurial Orientation

In terms of its components, EO is perceived to be explained by a set of behaviors, which include willingness to take risks, innovativeness, proactiveness, autonomy, and competitive aggressiveness; all of which emerged out of the entrepreneurship and business strategy literature (Bolton & Lane, 2012). The choice of entrepreneurial components to be concentrated and examined for the purpose of the present study was based on existing research portraying entrepreneurial orientation as an inherent trait among most entrepreneurs (Beattie, 2016), which conveyed that characteristics or traits of entrepreneurs form the basis of entrepreneurial orientation. Moreover, entrepreneurial orientation has been conceptualized in existing literature as having anywhere between three to five dimensions, which may vary independently (Richard *et al.*, 2004). According to Rauch *et al.* (2009), three dimensions of EO have been frequently used and cited consistently in the literature: risk taking, innovativeness, and proactiveness, but there exists two more components that have been identified based on early theories and have been considered additional and significant components to the Entrepreneurial orientation construct. Therefore, based on existing literature, the present study highlights the following four entrepreneurial orientation components in order to develop a valid measure of the construct: Creativity and innovativeness, proactiveness, risk taking, and autonomy.

1.4. Creativity and Innovativeness

Organizational innovation and creation have been commonly found as key factors in terms of entrepreneurship (Stopford & Baden-Fuller, 1994). Creativity in the present context, wherein entrepreneurs refer to low-income households working without any supportive large organization and with few standard stock responses or operating routines to novel situations, refers to the inventive ability of entrepreneurs to create solutions to problems and challenges, particularly in uncertain situations that require creativity to impress order and forward solutions (Pendergast, 2003). On the other hand, innovativeness, as a significant factor to typify entrepreneurship (Lumpkin & Dess, 1996), could be described as an organization's efforts to discover novel opportunities and new solutions which involve experimentation and creativity that results in new products and services, or/and improved technical aspects of existing products and services (Dess & Lumpkin, 2005).

Innovation forwards something into new usage and the criteria for innovation remains commercial, which is why Innovation is considered an entrepreneurial activity (despite the fact that innovations may differ in its impact and amount), as it engages innovative combinations that could radically alter the bases of competition within an industry, or may lead to the formation of a completely new industry and hence the definition acknowledges the centrality of innovation towards entrepreneurship (Cuervo *et al.*, 2007). Research asserts that for organizational success, innovativeness is vital and since entrepreneurship emerges to be a significant orientation that managers need to foster, thus creativity and innovativeness among entrepreneurs are considered an important driver of entrepreneurial orientation (Hult *et al.*, 2004).

1.5. Risk Taking

Risk taking involves undertaking bold activities of venturing into the unknown, borrowing heavily, or/and devoting valuable resources to ventures in uncertain environments (Rauch *et al.*, 2009). Risk taking is a concept that is generally perceived as a feature often employed to explain entrepreneurship (Lumpkin & Dess, 1996). According to Miller and Friesen (1982), risk taking refers to “the degree to which managers are willing to make large and risky resource commitments-i.e., those which have a reasonable chance of costly failures”. Organizations with entrepreneurial orientation are often exemplified by their risk-taking behavior, such as making large resource commitments or incurring heavy debt, in the interest of acquiring high returns by exploiting available opportunities within a marketplace (Lumpkin & Dess, 1996). Risk taking remains a well accepted and widely used scale for approaching entrepreneurial orientation (Miller, 1983), and the construct could be measured at firm-level by managers’ responses in regards to firms’ inclination towards engaging in risky projects and the their preferences in terms of cautious versus bold actions to achieve organizational objectives (Lumpkin & Dess, 1996; Miller, 1983). Other factors as identified by earlier studies that may potentially predict risk taking include, results of previous risk taking (Thaler & Johnson, 1990), the way risky problems are framed (Kahneman & Tversky, 1979), and the capability of firms to perform under risky environment (Slovic *et al.*, 1980).

1.6. Proactiveness

Proactiveness could be defined as acting in anticipation of future needs, problems, or changes by relating to market opportunities and exploiting initiatives and thereby leading the marketplace (Lumpkin & Dess, 1996; Lumpkin & Dess, 2001). The concept of proactiveness refers to an opportunity-seeking, forward-looking perspective characterized by heavy dependence on structural resource capital development and introduction of innovative services and products ahead of the competitors acting in anticipation of potential demands (Rauch *et al.*, 2009; Lumpkin & Dess, 2001). Proactiveness is flagged vital to the entrepreneurial orientation construct because it promotes a forward-looking perspective, which is coupled by new-venturing or innovative activities (Lumpkin & Dess, 1996). According to Miller and Camp (1986), the second firm to penetrate a new market could be as pioneering as the first entrant and just as likely to achieve success by employing proactiveness, thus reflecting the significance of proactiveness towards entrepreneurial success. Moreover, proactiveness involves adopting initiatives in an effort to shape the environment to one's own advantage, while responsiveness involves being accommodative towards competitors' challenges, and therefore entrepreneurial orientation involves both proactiveness in pursuing opportunities and the will to aggressively respond to competition (Lumpkin & Dess, 1996).

1.7. Autonomy

Autonomy could be defined as an individual or a team’s independent action of conveying a vision or an idea into view thereby transmitting it out through to completion and the construct is one of the key components of Entrepreneurial orientation as it lets an individual or a group of individuals implement their creativity and promising ideas required to practice good entrepreneurship (Lumpkin & Dess, 1996). In an organization, autonomy could be exemplified as a process involving two stages: the first comprising of a project “definition” which is executed by the autonomous firms’ members and the second comprising a project “impetus” which is executed by champions who are able to sustain the autonomous efforts (Bower, 1970). It was found that a significant link exists between the impetus processes and

project definition formed by product champions who are known to play key entrepreneurial roles in an organization by hunting down resources, enforcing out of the way authority, and advocating risktaking on behalf of promising breakthroughs and innovative ideas (Kanter, 1983; Peters & Waterman, 1982).

According to research, autonomy could differ in firms depending on its ownership and management style or by its functioning size translating that in an organization where the key decision-maker is either the owner or the manager; autonomy is imposed by ownership rights and may depend on the centralization level or on the degree of delegation which thereby could be associated to the size of the organization (Lumpkin & Dess, 1996). Meanwhile, in separate organizational settings, autonomy could be created by experienced organizational champions favoring autonomy creating efforts by means of actions, such as bypassing budgets and procedures or bending the rules and regulations (Shane, 1994).

2. Methodological approach

This study adopted a cross-sectional design to develop a valid measure for entrepreneurial orientation particularly in the context of low-income households in Malaysia. The target population for this study is the low-income households of the poorest state in Peninsular Malaysia, i.e., Kelantan. This study then selected four locations in Kelantan, including Bachok, Tumpat, Jeli, and Gua Musang. The population of this study is the low-income households registered under ‘*Majlis Agama Islam Dan Adat Istiadat Melayu Kelantan (ASNAF)*’. A total of 3,090 low-income households form the population across the four districts, i.e., Bachok (1394), Tumpat (1257), Jeli (233), and Gua Musang (206). Since this study intended to compare across the locations and other antecedents, it randomly selected 800 low-income respondents, a total of 200 respondents from each location. Data was collected through a face-to-face structured interview.

Table 1. Research Instrument – Entrepreneurial Orientation

Code	Questions
<i>1</i>	<i>2</i>
B1	I have an ability in generating new ideas
B2	I have an ability in initiating new activities
B3	I challenge myself to start goals
B4	I do not like routine task
B5	I prefer to try my own unique way when learning new things rather than doing it like everyone else does
B6	I often like to try unusual activities that are not necessarily risky
B7	I often like to try new activities that are not necessarily risky
B8	I would rather try to solve the problem
B9	I prefer to use appropriate methods to solve problems
B10	I like to try something new
B11	I like to do something and reflect valued-added
B12	I am training myself to be creative
B13	I wish I could be a catalyst to changes in businesses
B14	I often handle all business tasks in my own way
B15	I thrive in situations which encourage and reward my creativity
B16	I think that finding new ways to make changes in business is important
B17	Someone who always manages according to rules will succeed
B18	I always reform certain things in my own way

<i>1</i>	<i>2</i>
B19	I think out loud
B20	I usually think about how to find a new way of doing business
B21	I usually look for ideas that have the potential/opportunities to be highlighted, but no action taken
B22	I like to take bold steps to do something which is uncertain
B23	I am willing to invest a certain amount of time on something that might yield a high return
B24	I am willing to invest a certain amount of money on something that might yield a high return
B25	I tend to act 'boldly' in situations where risk is involved
B26	I have to ask in advance to be briefed in business
B27	I have to think in advance in order to get clarification effects related to business
B28	I am willing to take risks for the sake of business
B29	I buy insurance every time I travel
B30	I enjoy the uncertainty and risks of business since they energize me more than circumstances where there are predictable outcomes
B66	In my opinion, businesses will continuously grow if we can control our abilities
B67	I am able to identify opportunities where others do not see them
B68	I always keep an eye out for new business ideas when looking for information
B69	I am an avid information seeker
B70	I am a hard-core seeker of information
B71	I am able to find suitable jobs
B72	I can identify and capture business opportunities
B73	An opportunity to beat a competitor in a business deal is always a thrill
B74	I prefer the convenience of changing conditions
B75	I easily take chances compared to others
B76	Successful business people pursue any opportunity and do whatever they have to do in order to survive
B77	I think that a successful businessman would do whatever they need to do in order to remain in business
B78	I get excited creating my own business opportunities
B79	I usually act in anticipation of future problems, needs or changes
B80	I tend to plan ahead on projects
B81	I prefer to step-up and get things done rather than sitting and waiting for someone else to do it
B102	I am able and willing to be self-directed in the pursuit of opportunities
B103	I will take action free of stifling other constraints
B104	I am quite independent of the opinions of others
B105	I am uncomfortable when I have complete responsibility for deciding how and when to do my work
B106	I find that I can think better when I have guidance and advice from others
B107	I like a job in which I don't have to answer to anyone
B108	I respect rules and established procedures because they guide me
B109	I want to stand on my own feet

2.1. Research Instrument

The questionnaire was translated into Malay and checked for inter-translator consistency. The questionnaire was developed based on the review of the existing entrepreneurship indices and tested through a pilot survey and the instrument was enhanced based on the comment and feedback from the pilot survey. This study used a five-point Likert

scale ranging from one denoted as strongly disagree to five denoted as strongly agree to avoid confusion and bias from fatigue of longer scales. The research instrument was adapted and modified from past studies and the existing entrepreneurship index (i.e., Norasmah *et al.*, 2006; Noraishah, 2003).

3. Summary of Findings

3.1. Demographic Characteristics

The survey was conducted with 800 respondents living in Kelantan, Malaysia of which only 256 respondents (32.0%) were male and the rest were females (544 respondents or 68.0%). The age of respondents ranged from 19 to 102, with a median of 55.5. The respondents were asked about their educational background and it was found that out of 800 respondents, 151 had “completed primary six,” 158 had completed PMR/SRP, 284 had completed SPM/Form five, 6 went to the village school, 179 did not go to school and the remaining 22 respondents reported their educational background as “others”.

The study also inquired about the willingness of the respondents to venture into business. Only 3.5% of the respondents were uncertain about involving in a new venture, 71.3% respondents display affirmative response towards venturing into business while 25.3% gave a dissenting response towards venturing into business. Previous business experience of the respondents was also reported during the survey. However, it was found that a large segment of about 47.1% of respondents did not have any earlier business experience, while the rest (30.1%) of the respondents had less than five years of experience, 10.4% respondents had 6 to 10 years of experience, 4.4% respondents had 11 to 15 years of experience, 2.8% of respondents had 16 to 20 years of experience and 5.3% of respondents had more than 21 years of previous business experience.

3.2. Measuring Validity

The Fornell-Larcker criterion postulates that the latent variable is expected to share more variance with its assigned indicators than with any other latent variable, therefore the AVE of each latent variable should be greater than the latent variable’s highest squared correlation with any other latent variable (Henseler *et al.*, 2009). As shown in *Table 2*, the constructs do not meet the set criteria. Furthermore, the Heterotrait-Monotrait Ratio (HTMT) is an estimate of the correlation between constructs, paralleling the disattenuated construct score creation. Using a value of 0.9 as the threshold, this study failed to conclude that there was no evidence of a lack of discriminant validity in the context of Model A (*Table 2*).

Table 2. Validity – Model A

	Creativity and Innovativeness	Risk Taking	Proactiveness	Autonomy	Entrepreneurial Orientation
1	2	3	4	5	6
<i>Fornell-Larcker Criterion</i>					
Creativity and Innovativeness	0.810				
Risk Taking	0.894	0.846			
Proactiveness	0.927	0.876	0.795		
Autonomy	0.886	0.822	0.882	0.759	
Entrepreneurial Orientation	0.982	0.932	0.971	0.924	0.773

	1	2	3	4	5	6
<i>Heterotrait-Monotrait Ratio (HTMT)</i>						
Creativity and Innovativeness		-				
Risk Taking		0.958	-			
Proactiveness		0.932	0.919	-		
Autonomy		0.941	0.941	0.886	-	
Entrepreneurial Orientation		1.002	0.998	0.965	0.980	-

Furthermore, the loading of each indicator is expected to be greater than all of its cross-loadings (Henseler *et al.*, 2009). Given the evidence of higher levels of correlations among the items used, this study removed items with a cross-loading value of more than 0.75. After removing 29 items (noted in *Table 3*), the present study conducted the tests again.

Table 3. Cross Loading – Model A

	Creativity and Innovativeness	Risk Taking	Proactiveness	Autonomy	Entrepreneurial Orientation
1	2	3	4	5	6
B1	0.828	0.716	0.764	0.704	0.803
B2	0.720	0.622	0.653	0.624	0.696
B3	0.849	0.776	0.782	0.749	0.835
B4	0.608	0.511	0.515	0.535	0.576
B6	0.729	0.623	0.666	0.661	0.709
B8	0.778	0.693	0.703	0.724	0.762
B9	0.824	0.738	0.753	0.737	0.807
B10	0.789	0.777	0.718	0.676	0.780
B11	0.673	0.592	0.593	0.594	0.649
B12	0.860	0.746	0.787	0.738	0.834
B13	0.876	0.771	0.822	0.772	0.860
B14	0.891	0.806	0.845	0.789	0.882
B15	0.892	0.798	0.834	0.788	0.877
B16	0.847	0.752	0.797	0.761	0.836
B17	0.759	0.666	0.704	0.685	0.745
B18	0.857	0.768	0.807	0.774	0.848
B19	0.821	0.722	0.758	0.701	0.799
B20	0.887	0.830	0.863	0.805	0.892
B21	-0.841	-0.777	-0.817	-0.760	-0.844
B22	0.755	0.842	0.749	0.693	0.789
B23	0.831	0.869	0.805	0.760	0.853
B24	0.761	0.856	0.742	0.678	0.791
B25	0.783	0.877	0.790	0.712	0.823
B26	0.738	0.848	0.704	0.700	0.771
B27	0.743	0.831	0.705	0.712	0.772
B28	0.718	0.824	0.714	0.634	0.752
B30	0.710	0.816	0.704	0.661	0.748
B66	0.491	0.470	0.533	0.461	0.515
B67	0.770	0.722	0.819	0.724	0.801
B68	0.794	0.722	0.837	0.748	0.819
B69	0.789	0.736	0.847	0.724	0.819
B70	0.751	0.740	0.824	0.692	0.793
B71	0.742	0.749	0.799	0.709	0.785
B72	0.806	0.783	0.866	0.760	0.846

<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
B74	0.758	0.728	0.822	0.733	0.799
B75	0.715	0.690	0.801	0.689	0.761
B76	0.654	0.608	0.734	0.599	0.688
B77	0.658	0.616	0.726	0.607	0.690
B78	0.780	0.728	0.819	0.738	0.808
B79	0.726	0.670	0.798	0.741	0.769
B80	0.795	0.741	0.833	0.769	0.825
B81	0.763	0.676	0.805	0.757	0.790
B102	0.752	0.697	0.769	0.826	0.788
B103	0.790	0.713	0.786	0.849	0.815
B104	0.660	0.593	0.692	0.778	0.701
B105	0.508	0.426	0.515	0.670	0.539
B106	0.728	0.706	0.704	0.805	0.756
B107	0.471	0.484	0.477	0.605	0.513
B108	0.626	0.609	0.559	0.683	0.635
B109	0.765	0.694	0.770	0.821	0.792

As noted earlier, the AVE of each latent variable should be greater than the latent variable's highest squared correlation with any other latent variable, however (as shown in *Table 4*), the constructs do not meet the set criteria. Furthermore, the Heterotrait-Monotrait Ratio (HTMT) is an estimate of the correlation between constructs, paralleling the disattenuated construct score creation. Using a value of 0.9 as the threshold, this study failed to conclude that there was any evidence of a lack of discriminant validity.

Table 4. Validity – Model B

	Creativity and Innovativeness	Risk Taking	Proactiveness	Autonomy	Entrepreneurial Orientation
<i>Fornell-Larcker Criterion</i>					
Creativity and Innovativeness	0.766				
Risk Taking	0.770	0.866			
Proactiveness	0.803	0.753	0.782		
Autonomy	0.792	0.740	0.735	0.755	
Entrepreneurial Orientation	0.932	0.892	0.916	0.889	0.716
<i>Heterotrait-Monotrait Ratio (HTMT)</i>					
Creativity and Innovativeness					
Risk Taking	0.877				
Proactiveness	0.923	0.852			
Autonomy	0.936	0.857	0.859		
Entrepreneurial Orientation	1.030	0.962	1.004	1.009	

Given the evidence of higher levels of correlations among the items used, this study removed items with cross-loading values of more than 0.7. After removing 4 items (noted in *Table 5*), the present study conducted the tests again.

Table 5. Cross Loading – Model B

	Creativity and Innovativeness	Risk Taking	Proactiveness	Autonomy	Entrepreneurial Orientation
B2	0.720	0.590	0.595	0.552	0.681
B4	0.699	0.473	0.495	0.514	0.606
B6	0.816	0.572	0.640	0.619	0.736
B8	0.831	0.683	0.669	0.697	0.795
B11	0.771	0.561	0.568	0.610	0.695
B17	0.754	0.637	0.701	0.632	0.755
B26	0.704	0.892	0.664	0.687	0.805
B27	0.681	0.893	0.642	0.690	0.792
B28	0.628	0.826	0.670	0.569	0.739
B30	0.648	0.848	0.631	0.611	0.749
B66	0.573	0.436	0.636	0.445	0.586
B71	0.681	0.690	0.801	0.633	0.777
B75	0.607	0.646	0.771	0.615	0.730
B76	0.590	0.557	0.820	0.521	0.696
B77	0.600	0.565	0.824	0.531	0.705
B79	0.703	0.606	0.824	0.672	0.779
B104	0.601	0.565	0.631	0.750	0.696
B105	0.502	0.404	0.464	0.713	0.566
B106	0.696	0.705	0.645	0.850	0.788
B107	0.487	0.494	0.459	0.718	0.583
B108	0.671	0.582	0.544	0.736	0.692

Table 6. Validity – Model C

	Creativity and Innovativeness	Risk Taking	Proactiveness	Autonomy	Entrepreneurial Orientation
<i>Fornell-Larcker Criterion</i>					
Creativity and Innovativeness	0.784				
Risk Taking	0.687	0.871			
Proactiveness	0.710	0.737	0.784		
Autonomy	0.734	0.716	0.706	0.755	
Entrepreneurial Orientation	0.876	0.874	0.901	0.894	0.702
<i>Heterotrait-Monotrait Ratio (HTMT)</i>					
Creativity and Innovativeness					
Risk Taking	0.840				
Proactiveness	0.868	0.869			
Autonomy	0.905	0.852	0.841		
Entrepreneurial Orientation	1.021	0.975	1.012	1.025	

Finally, according to *Table 6*, the AVE of each latent variable is found to be greater than the latent variable's highest squared correlation with any other latent variable, hence the constructs met the set criteria. Moreover, the Heterotrait-Monotrait Ratio (HTMT) is an estimate of the correlation between constructs, paralleling the disattenuated construct score creation. As observed in *Table 6*, all values except one meet the set criteria. However, since the AVE values as noted in *Table 8* are higher than 0.5 and almost all loadings of each indicator are found to be greater than all of its cross-loadings (*Table 7*), this study concludes

that there is no evidence of a lack of discriminant validity in the context of Model C as shown below.

Furthermore, as observed below (*Table 7*), the loading of each indicator is found to be greater than all of its cross-loadings, thereby meeting the set criteria (Henseler *et al.*, 2009).

Table 7. Cross Loading – Model C

	Creativity and Innovativeness	Risk Taking	Proactiveness	Autonomy	Entrepreneurial Orientation
B2	0.744	0.595	0.591	0.553	0.694
B4	0.757	0.460	0.460	0.513	0.611
B6	0.843	0.553	0.611	0.618	0.736
B11	0.789	0.540	0.552	0.610	0.697
B27	0.621	0.879	0.633	0.690	0.786
B28	0.581	0.867	0.666	0.569	0.747
B30	0.593	0.868	0.629	0.611	0.750
B66	0.546	0.413	0.630	0.444	0.580
B71	0.656	0.682	0.799	0.633	0.785
B75	0.564	0.645	0.777	0.615	0.740
B76	0.493	0.551	0.848	0.521	0.694
B77	0.518	0.560	0.847	0.531	0.706
B104	0.547	0.564	0.609	0.751	0.703
B105	0.470	0.387	0.437	0.715	0.573
B106	0.640	0.688	0.633	0.850	0.794
B107	0.448	0.472	0.445	0.719	0.591
B108	0.638	0.549	0.511	0.734	0.685

3.3. Demographic, Reliability, and Validity

The following *Table 8* depicts that the mean and relatively small standard deviation values indicate that the values in the statistical data set of the current study are close to the mean of the entire data set used for the study. Nonetheless, to achieve a sturdy research, reliable and valid items are needed. For evaluation, the first and foremost criterion is typically the internal consistency reliability. Cronbach's alpha presumes that all the used indicators are equally reliable (Hair *et al.*, 2013). The reliability of the data for this research based on the Cronbach's alpha, composite reliability, and the Average Variance Extracted (AVE) is shown in *Table 8* below. The Cronbach's alpha for Autonomy, Creativity & Innovativeness, Proactiveness, Risk Taking, and Entrepreneurial Orientation has been found to be more than 0.7, thus, all the items used in the present study could be considered reliable.

Furthermore, according to Hair *et al.* (2013), the reliability value of an item particularly, for composite reliability, of 0.7 and more is acceptable, which is the case in the present study (see *Table 8*), indicating that all items could be considered acceptable. *Table 8* also shows that the Average Variance Extracted (AVE) values for all the variables are found to be higher than 0.50 and since Hair *et al.* (2011) state that the values should be higher than 0.50 because if the AVE is less than 0.50 on average, more error remains in the items than the variance that is explained by the construct (Hair *et al.*, 2013), therefore the values could be considered an acceptable convergent validity.

Corresponding to Hair *et al.* (2013), the discriminant validity can be assessed by examining the cross loadings of the indicators. For the discriminant validity, a component is considered reliable when the value is higher than 0.7 and the construct loading is higher than its cross loading. All the indicators in Model C in the above *Table 7* are assumed to be

reliable since it demonstrates that loadings are higher than 0.7 (Hair *et al.*, 2013). *Table 7* further reveals the cross-loadings of all the indicators' loadings which are higher than the entire cross-loadings, affirming the discriminant validity. Pertaining to the Fornell-Larcker criterion for discriminant validity, the AVE for each indicator needs to be higher than the construct's highest squared correlation with another construct and since all the constructs meet the criteria as observed in *Table 6*, there is no evidence of a lack of discriminant validity. Furthermore, the Heterotrait-Monotrait Ratio (HTMT) is an estimate of the correlation between constructs, which parallels the disattenuated construct score creation. Although *Table 6* illustrates that the correlation between constructs (Creativity and Innovativeness with Autonomy) is slightly higher than the threshold ($0.905 > 0.90$), this study concludes that there is no evidence of a lack of discriminant validity based on the AVE values in *Table 8*. The AVE values for all constructs are more than 0.5, indicating sufficient convergence validity.

Table 8. Demographic, Reliability, and Validity

	Items	Mean	SD	Cronbach's Alpha	Composite Reliability	AVE
Creativity & Innovativeness	4	3.5042	.1.0778	0.790	0.864	0.615
Risk Taking	3	2.9775	1.16777	0.841	0.904	0.759
Proactiveness	5	2.8475	.1.0503	0.840	0.888	0.615
Autonomy	5	2.8438	.94893	0.811	0.869	0.570
Entrepreneurial Orientation	17	2.8316	.86521	0.934	0.942	0.501

3.4. Path Coefficients

Path coefficients are estimated path relationships in the structural model (i.e., between the constructs in the model) (Hair *et al.*, 2013). Illustrated below, *Table 9* reveals a positive and statistically significant (at the chosen 5% level of significance) effect of the path coefficients of Autonomy, Creativity & Innovativeness, Proactiveness, and Risk Taking on Entrepreneurial Orientation indicating that the constructs employed are significantly able to predict Entrepreneurial Orientation. Additionally, *Table 9* also translates the Beta and t-values which reveal that Autonomy is a single construct which makes the strongest unique contribution in explaining Entrepreneurial Orientation as reflected by its highest Beta value and highest percentage variance as explained followed by Proactiveness, Creativity & Innovativeness, and Risk Taking.

Table 9. Path Coefficients of Reflective Hierarchical Model

	Beta	t-value	p-value
Autonomy → Entrepreneurial Orientation	0.303	47.767	0.000
Creativity & Innovativeness → Entrepreneurial Ori.	0.257	40.089	0.000
Proactiveness → Entrepreneurial Orientation	0.329	32.378	0.000
Risk Taking → Entrepreneurial Orientation	0.238	27.964	0.000

Conclusion

The formulation of the previous entrepreneurial orientation models and its original empirical research have been extensively carried out from the North American perspective (Miller, 1983; Covin & Slevin, 1989; Lumpkin & Dess, 1996), reflecting a need for research

penetration of the constructs in a developing nation's context. Moreover, previous research also indicated a need to develop and validate a complete and prevalent measurement of entrepreneurial orientation (Lumpkin & Dess, 2001; Bolton & Lane, 2012). Present study answered the call of research and as such, focused on the constructs of Creativity and Innovativeness, Risk Taking, Proactiveness, and Autonomy as components, and thereby developed a valid measure of entrepreneurial orientation in the context of low-income households in Malaysia.

While it is acknowledged that the findings of the present study are mere incremental contributions to the overall understanding and knowledge of entrepreneurial orientation, however, in its contribution, the present study has forwarded and confirmed the reliability and validity of a new instrument to measure Entrepreneurial Orientation. As posited, this study found significant relationships between Entrepreneurial Orientation and all of its components (i.e., Creativity and Innovativeness, Risk Taking, Proactiveness, and Autonomy) by means of relevant statistical analyses. The instrument development and validation process for all constructs employed by the present study has confirmed that the new instrument to measure entrepreneurial orientation is not only internally consistent, but also multi-dimensional and stable across samples. However, as a limitation of this study, it is acknowledged that the developed instrument, although found statistically reliable and valid, has not been tested; as it was not within the scope of present study. It is therefore recommended that future researchers could test the instrument forwarded by the present study and thereby carry out quantitative studies focusing on entrepreneurial orientation across different income groups that could clarify the extent to which the developed instrument is replicable across a wider set of countries, which in turn may contribute to future entrepreneurial orientation related research and more generally towards theorizing entrepreneurship in the context of both developed and developing nations.

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