Journal of Contemporary Issues in Business and Government Vol. 27, No. 2,2021
https://cibg.org.au/

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

Measurement and Validation of Entrepreneurial Competency Scale

MINIMOL M.C.
Associate Professor Rajagiri College of Social Sciences (Autonomous) Rajagiri Valley, Kakkanad Kochi, - 682 039, Kerala, India.
E Mail: minimol@rajagiri.edu
Mobile: 09846329021

Abstract
The current study is intended to explore the dimensions of entrepreneurial competency construct and the factors that make up each dimension. Entrepreneurial competency is measured in the present study through a survey conducted among small and medium entrepreneurs. Potential indicators are identified from the existing literature. Different researchers use different aspects of competency to track the level of entrepreneurial competency possessed by small and medium entrepreneurs across the world. The existing literature is not providing any evidence of a standardized, validated and self-administered entrepreneurial competency scale. Most of the studies conducted in the field either depends on general competency model or focus on only qualitative aspects of competency.
Key Words: Entrepreneurial competency scale, measurement, scale validation, factor analysis, small and medium entrepreneurs.

Introduction

Entrepreneurial competencies are defined as underlying characteristics such as generic and specific knowledge, motives, traits, and self-images, social roles and skills which result in venture birth, survival and or growth (Bird, 1995). Muzychenko and Saee (2004) differentiate between innate and acquired aspects of competency. The former involves traits, attitude, self-image and social roles and the latter involve components acquired at work or through theoretical and or practical learning, and are also referred to as internalized elements (Bartlett &Ghoshal, 1997) while the latter are often called externalized elements (Muzychenko & Saee, 2004). The internalized aspects of competencies are difficult to change, where as the externalized elements

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

can be acquired trough proper training and education programmes and need to be practiced (Garavan & McGuire, 2001; Man & Lau, 2005).

Different researchers use different aspects of competency to track the level of entrepreneurial competency possessed by small and medium entrepreneurs across the world. The existing literature is not providing any evidence of a standardized, validated and self-administered entrepreneurial competency scale. Most of the studies conducted in the field either depends on general competency model or focus on only qualitative aspects of competency. None of the studies focuses on the functional aspects of entrepreneurial competency, and hence, the current study.

Conceptual Framework

Huck and McEwen (1991) find that management, planning and budgeting, and marketing/selling are the three most important competency areas for Jamaican entrepreneurs. Minet and Morris (2000) argue that adaptation is the core of entrepreneurial competency. Chandler and Jansen (1992) argue that to function effectively in entrepreneurial role, two competencies are required: one is the ability to recognize and envision taking advantage of opportunity; the other is the drive to see firm creation through to fruition, which requires the willingness and capacity to generate intense effort for long, hard hours. Baum et al. (2001) distinguish between specific competency and general competency. Specific competency consists of industry skills and technical skills, while general competency includes organization skills and opportunity recognition skills. Sony and Iman (2005) decompose entrepreneurial competency into four dimensions: management skills, industry skills, opportunity skills and technical skills. Man et al. (2002) defined entrepreneurial competencies as higher-level characteristics encompassing personality traits, skills and knowledge, which can be seen as the total ability of the entrepreneur to perform a job successfully. Six major competency areas are identified in their work: (1) opportunity, (2) organizing, (3) strategic, (4) relationship, (5) commitment, and (6) conceptual competencies. Kabir, Ibrahim and Shah (2017) examined the relationship between entrepreneurial competency and firm performance of female entrepreneurs in Nigeria. The study indicated that for female Entrepreneurs in Nigeria to succeed in their businesses, they need to equip themselves with necessary competencies. They found out tht strategy, opportunity and organizing competencies have positive direct relationship with firm performance. Wulani, Fenika. (2019) developed a scale for measuring entrepreneurial competence of SME owners in Indonesia using competency indicators made from three stages of development, namely exploratory competency items, expert judgment, and scale validation. The result of the study shows that 5 competency dimensions are covering 26 indicators. The dimensions of entrepreneurial competence are managerial , strategic, service quality, development, and performance competencies. Tittel and Terzidis (2020)in their study entrepreneurial competences revise developed a consolidated and categorized list of entrepreneurial competences. They have grouped the categories of competence into three levels such as personal, social and professional level competencies. Käthe and Carlos

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

(2018) developed a model explaining the general entrepreneurial competencies. The model gives new insights about the how to understand and explore entrepreneurial opportunity by a successful entrepreneur, based on his personal characteristics. Arafeh,(2016) in his study An entrepreneurial key competencies' model proposed a softcomputing-based entrepreneurial key competencies' model (SKECMfor predicting the overall quality of entrepreneurial competencies. The model is based on three-clusters, ten key entrepreneurial competencies .

For the purpose of the present study, entrepreneurial competencies are defined as individual characteristics that include both attitudes and behaviours, which enable entrepreneurs to achieve and maintain success in their ventures. More specifically, in this study, entrepreneurial competencies are comprised of the entrepreneur's motives, traits, self image, attitudes, behaviours, skills and knowledge (Boyatzis, 1982; Brophy & Kiely, 2002). Measuring these dimensions, particularly those representing non-behavioural elements, is a challenge because internal characteristics such as need for achievement, self confidence and risk taking) are hard to observe and must be measured through introspection and self support or inferred from an entrepreneur's behaviours. The six competency areas are given in Table 1

Table 1
The Six Competency Areas Identified in the Literature Man et al. (2002)

Competency Area	BEHAVIOURAL FOCUS
Opportunity competencies	Competencies related to recognizing and developing market opportunities through various means
Relationship competencies	Competencies related to person-to -person or individual – to- group based interactions. For Eg. Building a context of cooperation and trust, using contacts and connections, persuasive abilities, communication and interpersonal skill
Conceptual competencies	Competencies related to different conceptual abilities which are reflected in the behaviour of entrepreneur, eg. Decision skills, absorbing a and understanding complex information and risk-taking and innovations
Organizing competencies	Competencies related to organization of different internal and external human, physical, financial and technological resources including team-building, leading employees, training and controlling

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

Strategic competencies	Competencies related to setting, evaluating and implementing the strategies of the firm
Commitment competencies	Competencies that drive the entrepreneur to move ahead with the business

Source: Adam and Shell(1993), Barlett and Ghoshal(1997),Baum), Bird(1995), Chandler and Jansen(1992), Durkan et.al(1993),Hunt(1998), Lau et.al.(2000), McClelland(1973).

Method

Developing the Entrepreneurial Competency Construct

The current study was intended to explore the dimensions of entrepreneurial competency construct and the factors that make up each dimension. Entrepreneurial competency is measured in the present study through a survey conducted among small and medium entrepreneurs. Potential indicators were identified from the existing literature. There were 72 indicators of entrepreneurial competency as revealed by the existing literature. The items were finalized after discussions with experts and officials in the field and thereby reduced the number of indicators to 65.

Pretesting of the Instrument

To ensure the suitability of the indicators to measure the entrepreneurial competency of small and medium entrepreneurs, a survey was conducted among 50 small and medium entrepreneurs in Ernakulam district of Kerala. The purpose of pretesting was to ensure that the respondents understand the indicators in the same way as the researcher conceived the variables and are capable of eliciting proper and accurate responses from them. The competency indicators were measured on a five point Likert scale ranging from strongly agree to strongly disagree during the month of August 2018. This resulted in the reduction of 65 indicators to 47 indicators. Hence entrepreneurial competency in the present study is conceived as a construct made up if these 47 competency indicators. Using a questionnaire with this 47 indicators, a study was conducted among 650 small and medium entrepreneurs in Kerala during October 2018 to test the validity of the data collection instrument.

Results and Discussion

Factor analysis technique was used to identify the factor structure of indicators that form entrepreneurial competency. After identification of the factor structure, the goodness of measures of the entrepreneurial competency scale in terms of reliability and validity were also established. A Principal Component Analysis of the 47 indicators of entrepreneurial competency was performed using SPSS 17.0 to reduce the larger set of variables into a smaller, conceptually more coherent set of variables, by identifying redundancy among the variables. The items that load higher than 0.5 were retained while low loading items were eliminated. The loadings of all

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

indicators should be 0.5 or above on their hypothesized component to be considered practically significant (Hair et al., 2009).

The visual examination of the correlation matrix revealed that most correlations were above the recommended value of 0.3. The sufficiency of correlations in the data set for factor analysis was thus established.

For factor analysis to be done, it is appropriate to first test that variables are sufficiently interconnected and the Kaiser-Meyer-Olkin statistic is the usual measure. The KMO statistic indicates the proportion of variance in the variables that might be caused by underlying factors. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.873, a level described as 'marvelous' by Kaiser (1974). The Barlett's test of Sphericity is a statistical test for the presence of correlations among the variables and tests the hypothesis that the correlation matrix is an identity matrix i.e., all diagonal elements are 1 and off diagonal elements 0, implying that all the variables are uncorrelated and therefore unsuitable for structure detection. The Bartlett's Test of Sphericity was significant ($p<0.001$) and the test value was high at 25300.37 leading to the conclusion that there were correlations in the data set are appropriate for factor analysis.

Validation of the Entrepreneurial Competency Scale

To ensure that the instrument developed to measure entrepreneurial competency was indeed measuring the construct, the goodness of measures was assessed by testing the reliability and validity of the instrument. Validation tests such as convergent and discriminant validity were conducted before the Structural Equation Modeling was done.

Convergent Validity

Convergent validity tests establish whether responses to the questions are sufficiently correlated with the respective latent variables. Convergent validity is usually assessed based on the comparison of loadings calculated through a non-confirmatory analysis with a fixed value. Two criteria are recommended as the basis for concluding that a measurement model has acceptable convergent validity: p values associated with the loadings should be lower than 0.05 and loadings for indicators of all respective latent variables must be 0.5 or above for the convergent validity of a measure to be acceptable (Hair et al., 2009). In the study, the factor loadings associated with the latent variables ranged between 0.520 and 0.936 as shown in Table 3 and hence it was reasonable to assume that the measurement model for entrepreneurial competency has acceptable convergent validity. The loadings for each latent variable (shown in parentheses) were all high while cross loadings were low. The P values associated with the loadings were all lower than 0.001. Since there were no indicators for which these criteria were not satisfied, there was no need to remove any of the indicators and the convergent validity of the scale was established.

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

Discriminant Validity

Discriminant validity tests verify whether responses from the respondents to the questions are either correlated or not with other latent variables. A measurement model has acceptable discriminant validity if the square root of the average variance extracted (AVE) for each latent variable is higher than any of the correlations between the latent variable under consideration and any of the other latent variables in the measurement model (Fornell & Larcker, 1981). On the diagonal of the latent variable correlations table (Table 3) are the square roots of the average variances extracted for each latent variable.

Table 2
Reclassified Loadings with Indicators

INDICATORS	Reclassified Indicators with Component Loadings			
	Strategic Management Competency	Financial Management Competency	Personnel Management Competency	Operations Management Competency
I ensure that activities are directed towards achieving business goals	0.892			
I can predict market movements/fluctuations correctly	0.876			
I try out competitor‘s products	0.858			
I always look at solving old problems in new ways	0.856			
I have a clear picture about the objectives of our business	0.854			
I clearly know what to do to achieve our business objectives	0.851			
I always try to bring up new ideas in the business	0.827			
I am always ready to grab a market opportunity [eg. Festive seasons]	0.822			
I am sure that what we do is the best way to achieve our objectives	0.764			

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

I regularly take feedback from customers	0.754			
I continuously monitor what our competitors/ peers are doing	0.714			
We have decided on what to do for the next 3-5 years in our business	0.664			
I can predict my next year's budget accurately		0.937		
I am always on the lookout for new schemes from banks, LAs etc.		0.925		
I always do cost – benefit analysis for activities		0.919		
I know what is my return and cost on capital		0.912		
I maintain a network of personal contacts for financial consultation		0.902		
I have incentive system to reward above-norm performance		0.761		
I have continuous records of cash flow analysis		0.715		
I can plan my financial need for production according to market changes		0.711		
I modify my activities to better suit our future objectives		0.663		
I try to create a positive climate and culture in the business			0.868	
I use personal contacts, influences, and relations to increase business			0.866	
I ensure that right people are assigned the right duties and responsibilities			0.859	
I have links with experts/advisors for help			0.854	
I have small sub-groups assigned specific roles and activities			0.804	
I motivate my colleagues to achieve targets and goals			0.713	

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

I participate regularly in meetings to discuss future actions			0.687	
I have specific plans decided for the next one or two years				0.841
I always ensure sufficient supply of resources in business				0.805
I am very keen to ensure that the business runs smoothly				0.799
I try to minimize cost, effort and time by analysis [eg. Vendor selection]				0.778
I evaluate alternatives before selecting an action				0.737
I can use technology to improve efficiency in production				0.682

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization
a. Rotation converged in 12 iterations

Table 3
Combined Loadings and Cross Loadings: Entrepreneurial Competency Scale

	Entrepreneurial Competency				
	Strategic Management	**Financial Management**	**Personnel Management**	**Operational Management**	**P value**
EC31TOT	(-0.850)	0.515	-0.627	0.592	<0.001
EC36TOT	(-0.621)	-0.052	1.006	-0.099	<0.001
EC1TOT	(-0.895)	-0.243	-0.598	0.024	<0.001
EC10TOT	(-0.839)	0.207	-0.053	-0.293	<0.001
EC13TOT	(-0.699)	0.4	-0.533	0.571	<0.001
EC8TOT	(-0.936)	-0.731	-0.06	0.071	<0.001
EC2TOT	(-0.885)	-0.471	-0.374	-0.003	<0.001
EC3TOT	(-0.852)	-0.435	-0.186	0.109	<0.001
EC9TOT	(-0.708)	1.222	0.178	-0.285	<0.001

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

EC29TOT	(-0.788)	0.39	-0.105	0.565	<0.001
EC4TOT	(-0.747)	1.482	1.13	-0.342	<0.001
EC12TOT	(-0.931)	-0.731	-0.06	0.071	<0.001
EC43TOT	-0.668	(-0.759)	-0.245	-0.376	<0.001
EC40TOT	-1.157	(-0.694)	-0.957	-0.063	<0.001
EC11TOT	-0.68	(-0.747)	-0.898	-0.121	<0.001
EC35TOT	0.81	(-0.853)	1.865	0.224	<0.001
EC42TOT	0.079	(-0.636)	0.694	-0.143	<0.001
EC41TOT	0.972	(-0.766)	-0.17	0.277	<0.001
EC15TOT	-0.464	(-0.520)	1.23	-0.407	<0.001
EC7TOT	-0.195	(-0.756)	-0.021	0.182	<0.001
EC44TOT	1.467	(-0.767)	-0.096	0.381	<0.001
EC34TOT	0.033	-0.415	(-0.935)	0.092	<0.001
EC39TOT	0.98	0.779	(-0.897)	0.317	<0.001
EC22TOT	-0.652	-0.520	(-0.837)	0.224	<0.001
EC24TOT	-0.261	0.123	(-0.916)	-0.18	<0.001
EC14TOT	-0.448	0.233	(-0.934)	-0.243	<0.001
EC18TOT	0.351	-0.09	(-0.897)	-0.121	<0.001
EC27TOT	1.191	0.91	(-0.693)	0.256	<0.001
EC19TOT	0.121	0.447	0.357	(-0.903)	<0.001
EC21TOT	-0.114	0.355	0.642	(-0.886)	<0.001
EC20TOT	0.921	-0.102	0.299	(-0.643)	<0.001
EC23TOT	-0.839	0.253	0.358	(-0.843)	<0.001
EC17TOT	0.248	-0.672	-0.817	(-0.904)	<0.001
EC47TOT	0.918	-0.416	-1.037	(-0.862)	<0.001

Source: Analysis Results

As seen in Table 3, the average variance extracted for each variable (shown in parentheses) was higher than any other values above or below it or to its left or right. Thus discriminant validity of the measurement model was established.

Table 4

Latent Variable Correlations – Entrepreneurial Competency Scale

Variable Correlations	**Entrepreneurial Competency**			
	Strategic	**Financial**	**Personnel**	**Operational**

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

	Management	Management	Management	Management
ECF1	(0.732)	0.569	0.680	0.033
ECF2	0.669	(0.680)	0.442	0.350
ECF3	0.680	0.442	(0.793)	-0.251
ECF4	0.033	0.350	-0.251	(0.815)

Source: Analysis Results

Reliability

A measurement instrument has good reliability if the question statements associated with each latent variable are understood in the same way by different respondents. For a measurement instrument to have good reliability, both the composite reliability and Cronbach's alpha coefficients should be equal to or greater than 0.7 (Fornell & Larcker, 1981; Nunnally & Bernstein, 1994). As all the indicators were reflective latent variable indicators, the criteria apply. According to Field (2005), values between 0.7 and 0.8 of Cronbach's α are acceptable values of consistency.

Table 5
Latent Variable Coefficients – Entrepreneurial Competency Scale

Variable Coefficients	Entrepreneurial Competency			
	Strategic Management	Financial Management	Personnel Management	Operational Management
Composite Reliability	0.924	0.881	0.916	0.891
Cronbach's Alpha	0.909	0.845	0.887	0.803
Average Variance Extracted(AVE)	0.737	0.862	0.629	0.665

Source: Analysis Results

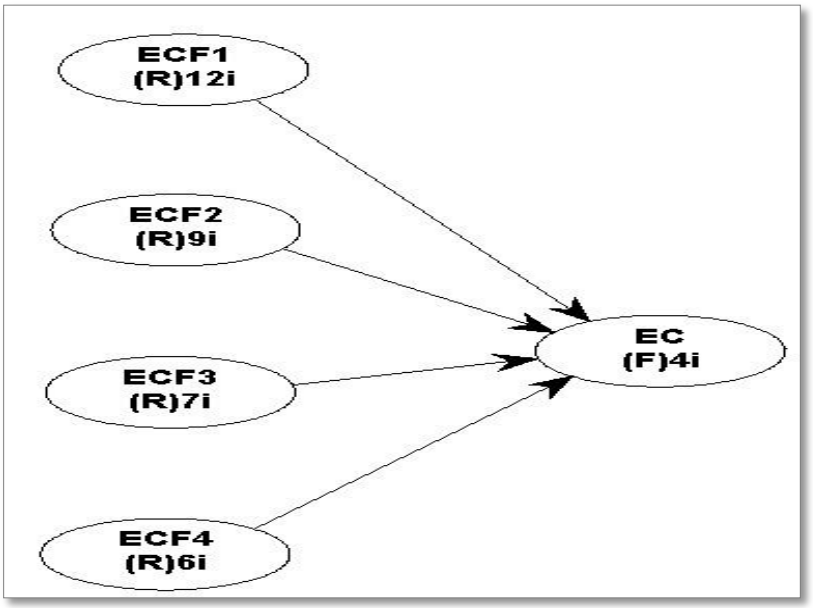
As seen in Table 5 the composite reliability coefficients ranged from 0.761 to 0.938 and the Cronbach's alpha coefficient between 0.722 and 0.924, both well above the 0.7 threshold. It was therefore concluded that the measurement model has acceptable reliability. Thus, the 47 variables identified for measuring the construct of entrepreneurial competency, were subject to factor analysis and four factors were identified to measure entrepreneurial competency, such as

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

strategic management competency, financial management competency, personnel management competency and operations management competency.

Validation of Entrepreneurial Competency Construct

Confirmatory factor analysis was used to find out the validity of the scale. While conceptualizing the entrepreneurial competency construct, an important issue was whether entrepreneurial competency needs to be defined as a formative or a reflective construct. A reflective construct implies that the different dimensions of EC are different manifestations of the construct and therefore reflect the content of entrepreneurial competency. A formative construct, on the other hand, is one in which the construct EC is defined as the outcome formed of its dimensions. In the case of reflective constructs, increase in any one of the dimension, say "strategic management competency" will result in an increase in all the other dimensions of EC. In the case of formative construct, an increase in any one of the dimensions increases the overall magnitude of EC, but does not necessarily affect the other dimensions. Entrepreneurial Competency was conceptualized in the study as a second-order formative construct on theoretical grounds. The dimensions of entrepreneurial competency with the indicators based on factor analysis are shown in Figure 1.



Entrepreneurial Competency Indicators
Figure 1

To assess the model fit with the data, it is recommended that the p-values for both the average path coefficient (APC) and the average R-squared (ARS) be both lower than 0.05. It is

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

also recommended that the average variance inflation factor (AVIF) be lower than 5 (Kock, 2012).

Table 6 below provides the model fit indices with p values of the estimated model. It was found that, all the three fit criteria were met and hence it was assumed that the model had acceptable predictive and explanatory quality as the data is well represented by the model.

Table 6
Model Fit Indices and p Values – Entrepreneurial Competency Construct

APC = 0.394, P<0.001
ARS = 0.733, P<0.001
AARS = 0.732, p<0.001
AVIF = 4.018, Good if < 5

Source: Analysis Results

In Table 7 the R squared and Q squared coefficients are provided only for endogenous variables. The R squared coefficient reflects the percentage of explained variance associated with the latent variable. In other words, it refers to the percentage of explained variance of the latent variable that is due to the latent variables pointing at it. The R squared coefficient for EC is 0.969 meaning 96 percentage of the variance in EC is explained by the four dimensions in the study. The Q squared coefficient, which is also known as Stone-Geisser Q squared coefficient, reflects the predictive validity associated with the latent variable. It is recommended that accepted predictive validity in connection with an endogenous variable is suggested by a Q squared coefficient greater than zero (Kock, 2012). The Q squared coefficient as seen in Table 7 is 0.964 and hence predictive validity of the model was also established.

Table 7
Latent Variable Coefficients –Entrepreneurial Competency Construct

Latent Variable Coefficients	**Strategic Management**	**Financial management**	**Personnel Management**	**Operational Management**	**Entrepreneurial Competency**
R - Squared					0.969
Composite Reliability	0.924	0.881	0.916	0.891	0.697

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

Cronbach's Alpha	0.909	0.845	0.887	0.803	0.800
Average Variance Extracted(AVE)	0.737	0.862	0.629	0.665	0.693
Q - Squared					0.964

Source: Analysis Results

In the case of formative constructs, it is recommended that indicator weights with P values lower than 0.05 need be considered valid items in a formative latent variable measurement item subset. As seen in Table 8, all indicators have P value below 0.001, which satisfies the criterion well and hence the need to remove indicators did not arise.

In addition to this, Cenfetelli and Bassellier (2009) and Petter, Straub and Rai (2007) recommend that the variance inflation factors (VIFs) of all latent variables be below the threshold 3.3 in the context of PLS-based SEM in discussions of formative latent variable measurement (Kock, 2012).

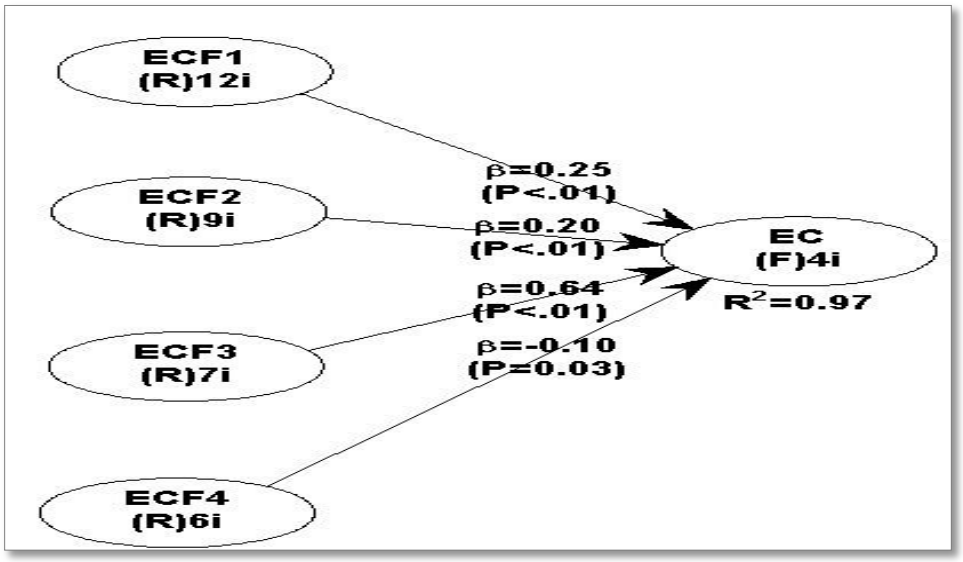
Table 8
Indicator Weights and VIF - Entrepreneurial Competency Construct

	Entrepreneurial Competency	**P Value**	**VIF**
lv_ECF1	(0.347)	<0.001	2.466
lv_ECF2	(-0.232)	<0.001	2.324
lv_ECF3	(0.328)	<0.001	1.341
lv_ECF4	(0.374)	<0.001	2.104

Source: Analysis Results

VIF is a measure of the degree of vertical collinearity or redundancy among the latent variables that are hypothesized to affect another latent variable. In reflective latent variables indicators are expected to be redundant while in formative latent variables indicators measure different aspects of the same construct and therefore should not be redundant. The structural model explaining the statistical significance of the four dimensions of entrepreneurial competency is given in Figure 2.

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389



Structural Model Analysis – Entrepreneurial Competency Construct

Figure 2

Structural equation models (SEM) with latent variables are often used to analyse relationships among variables. The relationships among latent variables were tested only after testing the goodness of measures of the entrepreneurial competency scale. The statistical significance of relationships among entrepreneurial competency and its extracted dimensions were of interest to this study. The path coefficients (β) and p values for the relationships are as shown Figure 2. All paths in the model were significant ($p<0.05$) and all path coefficients (β) were also positive indicating that an increase in any of these dimensions results in an increase in Entrepreneurial Competency. The four dimensions of entrepreneurial competency could explain 97 per cent variation in entrepreneurial competency construct.

Implications and scope for future research

The entrepreneurial competency scale would be useful for small and medium entrepreneurs as well as policy makers to conceive, design and implement training programmes for entrepreneurs. The scale can be used by implementing agencies for developing tailor made training modules for entrepreneurs, covering all the four dimensions of entrepreneurial competency as identified by the study. Future research can focus on the impact of these entrepreneurial competency dimensions on the business performance of entrepreneurs. The current study also contributes to the literature in the sense that it provides a functional perspective of measuring entrepreneurial competency as it focuses on the business functions to be performed in l organizational context.

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

Even though the study is based in Kerala, the finding are not culture specific, and hence it is expected to be generalizable in national and international context.

Reference

Adam, E. and Chell, E. (1993). The successful international entrepreneur: a profile. Paper presented at the 23rd European Small Business Seminar. Belfast: Northern Ireland.

Arafeh, L.(2016). An entrepreneurial key competencies' model. Ournal of Innovation and Entrepreneurship **5(**26), DOI: https://doi.org/10.1186/s13731-016-0048-6

Bartlett, C. A. and Ghoshal, S. (1997). The myth of the generic manager: New personal competencies for new management roles. *California Management Review, 40* (1), 92-116.

Baum, J.R., Locke, E.A. and Smith, K.G. (2001). A multidimensional model of venture growth. *Academy of Management Journal*. 44(2), 292–302.

Bird, B. (1995). *Toward a theory of entrepreneurial competency, advances in entrepreneurship, firm emergence and growth*. JAI Press, 2, 51-72.

Boyatzis, R.E. (1982). The *competent manager: A model for effective performance*. London: Wiley.

Brophy, M.,and Kiely, T. (2002). Competencies: A new sector. Journal of Industrial Training, 26(2/3/4), 165-176.

Cenfetelli, Ronald T., and Bassellier, Genevieve (2009). Interpretation of formative measurement in Information systems research. *MIS Quarterly*, 33(4), 689-708.

Chandler, G.N. and Jansen, E. (1992). The founder's self-assessed competence and venture performance. *Journal of Business Venturing. 7*(3), 223-236.

Durkan,P., Harrison,R., Lindsay,P. and Thomson,E.(1993). Competence and executive education and development in an SME Environment. *Irish Business and Administrative Research. 14* (1),65-80.

Field, A. (2005). *Discovering statistics using SPSS* (2nd ed.). London: Sage.

Fornell, C., Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18* (1), 39-50.

Garavan, T. and McGuire, D. (2001). Competencies and workplace learning: Some reflections on the rhetoric and the reality. *Journal of Workplace Learning, 13*(4), 144 - 164.

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

Hair, J. F. Jr., Black, W. C., Babin, B. J., and Anderson, R. E. (2009). *Multivariate data analysis*, (7th ed.) Upper Saddle River, NJ: Prentice Hall.

Huck, John, F. and McEwen, Thaddeus (1991). Competencies needed for small business success: Perceptions of Jamaican entrepreneurs. *Journal of Small Business Management. 29*(4), 90-93.

Hunt, J. M.(1998). Towards the development of a competency model of family firm leadership. Paper presentd in the 12th Annual National Conference. United States association for small business and entrepreneurship, Clearwater, FL15-18.

Kabir, Mohammed, Ibrahim, Hazril and Shah, K.A.. (2017). Entrepreneurial competency as determinant for success of female entrepreneurs in Nigeria. Indonesian Journal of Business and Entrepreneurship. 3(2), 142-152. DOI: 10.17358/ijbe.3.2.143.

Kaiser, H.F. (1974). An index of factorial simplicity. *Psychometrika*, 39, 31-36

Käthe, Schneider and Carlos, Albornoz (2018). Theoretical Model of Fundamental Entrepreneurial Competencies. Science Journal of Education. 6(1), 8-16.

Kock, N. (2012). WarpPLS 3.0 User Manual. ScriptWarp Systems, Laredo, Texas. Available in http://www.scriptwarp. com/warppls/UserManual.pdf, Retrieved on June 18, 2016.

Lau, T., Chan, K.F. and Man, T.Y.Y. (2000). The entrepreneurial and managerial competencies of small business owner/managers in Hong Kong: conceptual and methodological considerations. In Sancehez, R. and Heene, A. (Eds.), *Research in Competence-Based Management. Advances in Applied Business Strategy*, Connecticut: JAI Press Inc., 187-216.

Man, Thomas W.Y., Theresa, Lau and Chan, K. F. (2002). The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing.* 17, 123–142.

McClelland, D. C. (1973). Testing for competence rather than for intelligence. *American Psychologist*, 28, 1-14.

Minet, Schindehutte and Morris, Michael (2000). *Adaptation as a core entrepreneurial competency: Components, antecedents, and outcomes*. American Marketing Association. Conference Proceedings, 11, ABI/INFORM Global.

Muzychenko, O. and J., Saee (2004). Cross cultural professional competence in higher education. J. Manage. Syst.,16, 1-19.

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.389

Nunnally, J. C., and Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Petter, Stacie., Straub, Detmar, W., and Rai, Arun. (2007). Specifying formative constructs in

Sony, Heru Priyanto and Iman, Sandjojo (2005). Relationship between entrepreneurial learning, entrepreneurial competencies and venture success: Empirical study on SMEs. *International Journal of Entrepreneurship and Innovation Management, 5*(5/6), 454-468.

Tittel, Alexander and Terzidis, Orestis. (2020). Entrepreneurial competences revised: developing a consolidated and categorized list of entrepreneurial competences. Entrepreneurship Education. DOI: 10.1007/s41959-019-00021-4.

Wulani, Fenika. (2019). Scale development of entrepreneurial competency of SME owner in Indonesia. Academy of Entrepreneurship Journal. 25(4). 1-12.

It emerges that the categories can be
semantically grouped on three levels: personal level (self- or personal competence and learning competence), social level (interpersonal domain and social-communicative competence) and professional/domain level (functional competence, professional and method competence)
It emerges that the categories can be
semantically grouped on three levels: personal level (self- or personal competence and learning competence), social level (interpersonal domain and social-communicative competence) and professional/domain level (functional competence, professional and method competence)