

ENTREPRENEURIAL VENTURE GROWTH: THE INTERPLAY OF COGNITION AND LEARNING IN ENTREPRENEURIAL SUCCESS

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Abstract

Entrepreneurial venture growth is one of the core domains of scholarly inquiry in entrepreneurship. Despite the high failure rate, thousands of individuals decide to start ventures, though only a few achieve major success. A cognitive perspective may provide important insights into key aspects of the entrepreneurial process. At the same time, though an entrepreneur has the necessary cognition to prosper, entrepreneurial learning becomes important as a moderator in this relationship. This study has three objectives, two main hypotheses and four sub-hypotheses. It was a cross-sectional survey utilising 250 entrepreneurs in Sri Lanka. Findings of the study suggest that the secret behind successful entrepreneurs is that they may possess better-developed cognitive frameworks for accomplishing their tasks. Further, learning indeed helps entrepreneurs to acquire more refined cognitive frameworks for day-to-day business decisions and actions. The article concludes with implications for theory and practice, as well as directions for further research.

Key words: cognitive biases; entrepreneurial cognition; entrepreneurial learning; firm growth; small business

JEL Classification: L26; M13; D83

I. INTRODUCTION

New venture creation accommodates the most important segment of any country's economy. They grow and develop to be a large-scale business in the future and at the same time it contributes to the national economy, it creates new employment opportunities, produces innovations and increases productivity in the business sector (van Praag and Versloot, 2007). Therefore, Small and Medium Enterprises (SMEs), represent the most vital segment of the business sector. On the other hand, there is another side of SMEs which draws a major concern over the years among every country. It is obvious that large number of SMEs pop up continuously everywhere. Similarly, SMEs move through a risky path, struggling with many business-related issues. In fact, only a very few enterprises enjoy the opportunity of becoming star businesses. Indeed, firm growth is difficult to achieve and maintain. Only one in seven companies generate sustained, profitable growth (Zook and Allen, 1999). This situation leads to finding what factors play a role in the success of new ventures.

When it comes to the research findings of venture growth literature, it has been revealed that knowledge about firm growth is far from complete. McKelvie and Wiklund (2010) remarked that progress in growth research has been limited in recent years. Despite substantial interest and massive empirical research, theoretical development in the field has been notably slow (Davidsson and Wiklund, 2000; Delmar, Davidsson and Gartner, 2003; McKelvie and Wiklund, 2010; Shepherd and Wiklund, 2009).

Sandberg's (1986) ultimate argument was that new venture performance is a function of the entrepreneur, industry structure and strategy. Thus, early effort to find out the venture growth as function of the entrepreneur was ambiguous as previous research was done by using personal characteristics of entrepreneur (Baron, 2004). Within that large spectrum of venture growth literature, the relationship between cognitive factors of the entrepreneur and the relationship of those to a growing venture is highly cited in the literature but results held contradictory. The relationship of cognitive factors of an entrepreneur and the relationship of those to a growing venture are refined with a new perspective in this research.

On the other hand, cognition is the umbrella term for learning skills that influence the ability to learn and make sense of new information, which is crucial to successful learning. The study adds the domain of entrepreneurial learning as it is considered a continuous process acquired throughout the phases of the venture life cycle. Furthermore, the study argues that entrepreneurial learning shapes the thinking of an entrepreneur by trial and error and eventually with accumulated trials acquired in the life cycle. At the surface level, the study proposes that the learning process is acting as a strengthening factor of the said relationship of cognition and growth of a venture. Learning fosters adaptability and innovation, as entrepreneurs who actively engage in continuous learning enhance their ability to respond to market changes effectively (Botezat, Dodescu, Borza and Pop-Cohuț, 2025; Mia, Rahman, Ahmed, Iqbal and Khan, 2025).

As mentioned, research on cognitive factors of entrepreneurs manifests a positive signal towards venture success by abolishing the limitations of entrepreneurial trait/personality approach. This study links the entrepreneurial learning with cognitive factors of entrepreneurs to find whether there is a positive influence on correct use of cognitive factors which will ultimately lead to venture growth. This study uses the phrase of appropriate use of cognitive factors to signify the inferences of Baron (2004). Focally, study focuses on cognitive factors of founders, to examine their potential for venture success through their entrepreneurial learning. Based on the empirical literature, researchers were not able to find any precise answer to the above-mentioned issue.

II. THEORETICAL AND CONCEPTUAL BACKGROUND AND HYPOTHESES

Impact of an entrepreneur on firm outcomes in the domain of entrepreneurship is vital. Ferreira, Azevedo and Ortiz (2011) write that the main cause for firm growth and success is something that can be found inside of the firm, that is, factors regarding the entrepreneur or to the owner manager. Based on Ferreira, Azevedo and Ortiz's rationalizations on venture growth, the research pays attention to the factors inside the firm, simply an entrepreneur and the resources he/she holds. At the same time, Alvarez and Busenitz (2001) mentioned knowledge as an important and a central resource for entrepreneurial firms. In general terms, knowledge is defined as "the understanding, awareness, or familiarity acquired through study, investigation, observation, or experience over the course of time" (Bollinger and Smith, 2001). Given this, the notion of 'Knowledge' is rationalized as 'learning' in this study and emphasized that learning as an important resource for the venture growth. It is apparent in the literature that fewer researchers assert about effective utilization of the resources available and wise decisions would inevitably lead to growth of the firm. This inconclusive knowledge is the underlying premise that this study strives to address.

In line with these suggestions, this research's focus is on an investigation of how the entrepreneurial cognition in terms of contrasting perception of risk, counterfactual thinking, processing style and susceptibility to cognitive errors affect growth of the entrepreneurial venture. In this investigation, it also considers how entrepreneurial learning affects performance and cognition relationship. In the proposed theoretical model, the entrepreneurial cognition is the main independent variable; venture performance (sales growth, employment growth and equity growth) acts as the dependent variable and entrepreneurial learning is the moderating variable.

In this study, we offer entrepreneurial cognition as individual's assessments, judgment or decisions involving venture growth. However, Baron (2004) stated in his article not only that focus, cognitive perspective is useful in answering three basic entrepreneurial why questions and that provides additional insights into the complex process of entrepreneurship. Entrepreneurs use their unique mental models to be competitive in the current market while finding new expansions (Sánchez, Carballo and Gutiérrez, 2011). Those decisions and actions are inevitably challenging and important not only when starting new venture but also for the ventures currently involved in the business for their venture growth. Therefore, this study intends to build its main hypothesis as follows:

H1: Cognitive factors have positive influence on venture growth.

Proposing the relationship of entrepreneurial cognition (COG) and growth, the following section details the sub-hypotheses anticipated.

It is a generally accepted fact that entrepreneurs are forward thinkers and they are willing to take risk compared to the average person. At the same time, some research argues that entrepreneurs perceive lower risk and gauge the actual risk lower than its actual rate and this tendency leads to experiencing most of the venture failures (Simon, Houghton and Aquino, 2000). On the other hand, some empirical findings suggest that decisions are depending on the entrepreneur's cognitive capacity and successful entrepreneurs are better at identifying correct perception of risk compared to low successful ones and that is one of the reasons which make them better (Forlani and Mullins, 2000). Baron (2004) in his article identifies this as the first dimension of the cognition that differentiates the successful entrepreneurs and the less successful ones when finding the venture success. This leads to the following sub hypothesis:

H1a: Contrasting perception of risk has a positive influence on venture growth.

Counterfactual thinking (CF) is an essential feature of healthy cognitive and social functioning and part of life. The general recognition of CF is imagining "what might have been" in a given situation reflecting on outcomes and events that might have occurred if the person in question had acted differently or if circumstances had somehow been different (Baron, 1999). Baron (2004) mentioned this as his second dimension under the cognitive factors and he stated that even though there's a lower tendency among entrepreneurs to engage in CF, successful entrepreneurs are better at using their past mistakes and experiences to formation of better strategies on the future occasions. Accordingly, the study develops the next sub hypothesis as follows:

H1b: Counterfactual thinking to formulate improved task strategies have positive influence on venture growth.

Humans use two modes of information processing styles based on their cognition and that will define their decision-making competence (Evans, 2008). One processing style is fast associative processing mode and that required low cognitive effort and, in this study, it explains as heuristic processing style. On the other hand, systematic processing style explains as slower mode based on detailed information processing and that required high level of cognitive effort. Successful entrepreneurs can manage their preference for heuristic thinking towards more careful and strategic thinking when there is a need for it (Baron, 2004). Therefore, this study presents the next sub hypothesis as:

H1c: Processing styles have positive influence on venture growth.

Different types of cognitive biases (optimism, overconfidence, planning fallacy, affect infusion etc.) distort entrepreneurs' decision making and continue to plague into businesses (Russo and Schoemaker, 1992). When shaping entrepreneurs' success, susceptibility to such biases may also play a role. As suggested by Baron (2004) when comparing successful entrepreneurs with unsuccessful ones, it is possible to accept that they are less subject to a wide range of cognitive errors and biases. Thus, the study develops the final sub hypothesis of entrepreneurial cognition as:

H1d: Susceptibility to cognitive biases have negative influence on venture growth.

The following section details the moderator role of the entrepreneurial cognition and growth relationship.

Venture growth requires both founders and firm characteristics and supportive business environment. As founders' characteristics are the focus in this research, it is sensible to draw interest on potential moderates between entrepreneurial cognition and venture growth relationship. Barringer, Jones and Neubaum (2005) concluded in their research paper that entrepreneur's relevant industry experience, college education, and entrepreneurial story have an impact on the firm's ability to achieve and maintain a rapid growth rate. However, many scholars found it very hard to establish a direct relationship between entrepreneurs' learning and venture performance (Politis, 2005). In the literature remains unanswered the question of entrepreneurial knowledge that indirectly may have a positive impact on subsequent venture growth and cognition relationship. Thus, assessing all the arguments elaborated above this study confirms the next main hypothesis as:

H2: Entrepreneurial learning moderates the relationship between the cognitive factors and the growth of ventures.

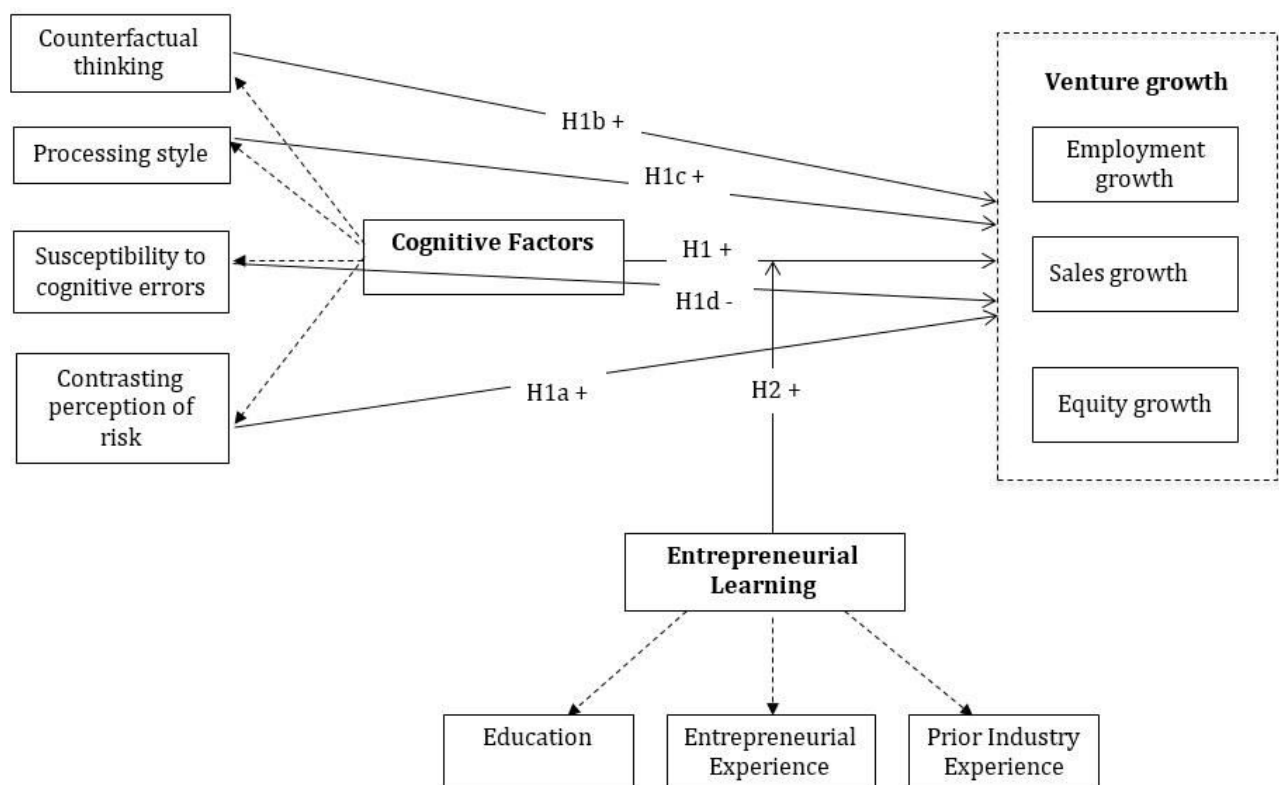


Figure 1. Conceptual Model of the Study

III. METHODOLOGY

A. Data Source

This study identifies the unit of analysis as an entrepreneur/SME owner manager in the firm hence it equated to the firm hereinafter. Therefore, the entrepreneurs/SME owner managers were categorized as sample subjects in the study. Study adheres to the operational definition of World Bank of Sri Lanka and captures SMEs below 99 employees.

Population of the study is registered SMEs under the District offices of the Small Enterprise Development Division, Ministry of Youth Affairs and Skill Development, Sri Lanka in 2014. 250 respondents' data were obtained from the sampling frame through the interviewer administrated structured questionnaire.

B. Variables and Measures

The measurement of growth of the firm was assessed in a seven-point Likert scale as suggested by Wiklund, Patzelt and Shepherd (2009). Entrepreneurs were asked to rate the venture's growth potentials relative to their main competitors. The indicators used to construct the variable are, sales, employment and equity growth. Afterwards, each indicator was standardized and summed into an index as Wiklund, Patzelt and Shepherd (2009) claimed. The Cronbach's α for the venture growth index is 0.792. Descriptive statistics of the key variables are depicted in Table 1.

Table 1. Descriptive statistics of the key variables

	Mean	SD	α	1	2	3	4	5	6	7	8	9	10
1.Growth	6.78	7.88	0.79	1									
2.Learning	.51	.26		.34**	1								
3.College Education	.41	.49		.26**	.57**	1							
4.Industry Experience	.65	.48		.08	.39**	-.22**	1						
5.EE	.47	.5		.20**	.63**	.12	-.13*	1					
6.Cognitive Factors	3.33	.45		.54**	.23**	.22**	-.00	.14*	1				
7.CFT	3.32	1.13	0.85	.70**	.33**	.30**	-.01	.23**	.78**	1			
8.CPR	2.47	.45	0.78	.60**	.33**	.24**	.13*	.16*	.61**	.66**	1		
9.Processing Style	4.03	.67	0.73	.10	-.01	.07	-.05	-.05	.54**	.15*	.05	1	
10.SCE	3.50	.79	0.83	-.20**	-.14*	-.13*	-.03	-.07	.33**	-.17**	-.18**	.12	1

Note. * $p < .05$; ** $p < .01$. N = 250, SD = Standard Deviation, α = Cronbach's alpha reliability coefficients, EE = Entrepreneurial Experience, CFT = Counter Factual Thinking, CPR = Contrasting Perception of Risk, SCE = Susceptibility to Cognitive Errors

As suggested by Baron (2004) the study employs the four-dimensional framework of Entrepreneurial Cognition as it is considered as less examined. Contrasting perception of risk, counterfactual thinking, processing style and susceptibility to cognitive errors were the dimensions of this independent variable. The scale items that were used to measure the counterfactual thinking (Adapted from Baron, 1999) were on seven-point scale, processing style (Adapted from MindTools, 2012), susceptibility to cognitive errors (Adopted from Scheier, Carver and Bridges, 1994) and contrasting perception of risk (Adapted from Forlani and Mullins, 2000) were measured on five-point scale.

Construct of learning was measured using dichotomous measurement and zero refers to "no" whereas "yes" refers to one.

Ventures in different industries exhibit different environmental characteristics that in turn influence growth potential. Therefore, the variable industry was used as controls in this study.

C. Study Measures

Measurement model was assessed using Confirmatory Factor Analysis (CFA) followed by path relationships using Structural Equation Modelling (SEM). Maximum Likelihood (ML) estimation method was used using AMOS 18.0 version. The model fit was measured using incremental and absolute fit indices (Hooper, Coughlan and Mullen, 2008; Byrne, 2010). These incremental model fit indices include, NFI, NNFI (TLI), CFI, PCLOSE, and absolute model fit indices include Chi-Square χ^2 (df,N)p, Relative χ^2 (χ^2 /df), RMSEA, GFI, AGFI, RMR, Hoelter (.05). Cutoff values and acceptable threshold levels were observed in relation to these indices and optimum models were obtained and this adhered to the stages of model specification, identification, testing and modification (Byrne, 2010). After obtaining the modified model the study proceeded to analyze the moderating impacts.

Baron and Kenny (1986) highlighted the importance of multi-group analysis technique to measure moderating impacts. Anderson and Gerbing (1982) χ^2 was used to measure the statistical significance differences across groups. In this process, two models were executed, namely; constrained model and unconstrained model and subsequently the moderating impact were observed.

IV. ANALYSIS AND RESULTS

A. Analysis of the Main Study

In this study researchers were interested to determine how the exogenous variables influence the endogenous factor using model trimming approach (Byrne, 2010). Thus, initial path model for the study is structured and it was identified that the model is recursive. Maximum Likelihood (ML) is the usual default estimation method in most SEM analysis (Kline, 2011). Variables in the study satisfied the multivariate normality, outliers' assumption and minimum sample requirements, therefore we adapted the maximum likelihood (ML) method to estimate the parameters of the path analysis. This model was developed based on Baron's (2004) proposed framework of Entrepreneurial Cognition and venture performance. Hence, researchers were not determined to alter the existing theory.

The validation process of the study adhered to the inferences of Kline (2011) as the study follows SEM models. In this regard, model specification, identification and estimation, testing, model fit, and model modifications were performed to obtain the optimum model. According to the initial model, there were some unsatisfied model fit indices. Therefore, researchers modified the initial model with the aim of bringing all the fit indices to the satisfied level.

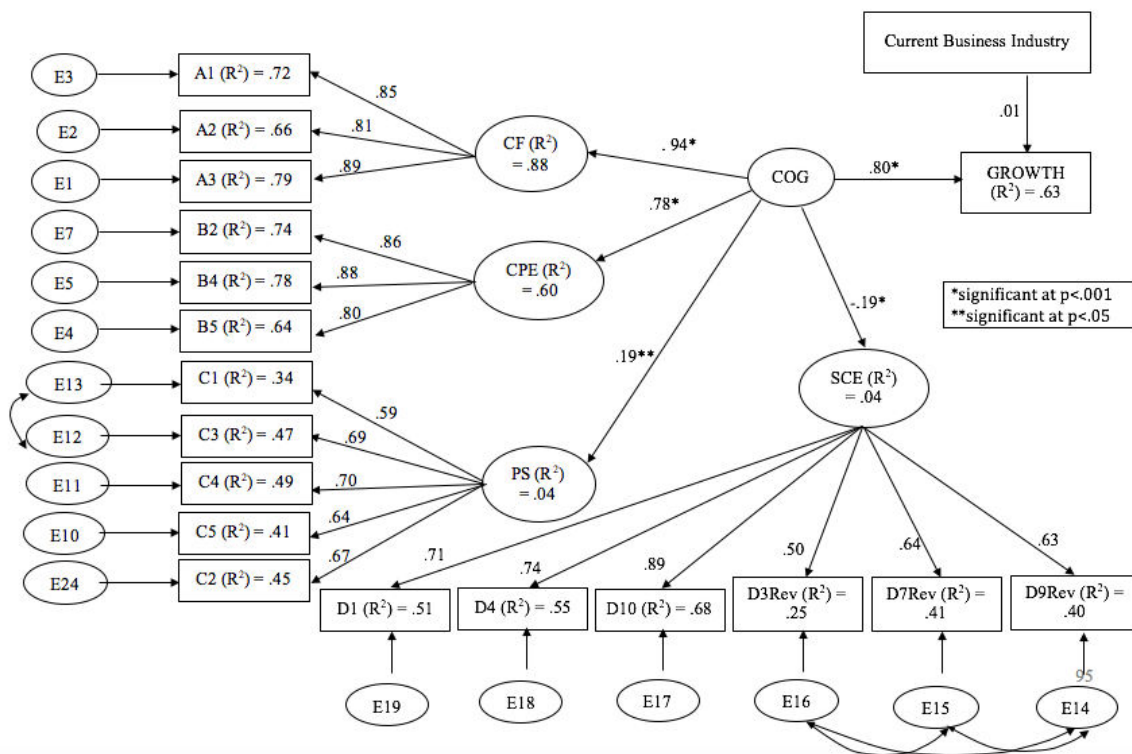


Figure 2. Standardized estimates of the modified model

The hypotheses of the study were generated acknowledging the inferences of Baron (2004) mainly. Thereafter, the model testing was performed and standardized estimates were observed and subsequently model fit was observed with incremental and absolute model fit indices. Assessing model fit was followed by model modification and residual terms were covariate for the optimum model. Finally, the validated model was obtained as depicted above. The modifications led the model to be fitted optimally. This is evident by the model fit indices observed and those have been depicted in Table 2.

Table 2. Absolute and incremental fit indices after altering the initial model

Indices	Cutoff values and acceptable threshold	Modified model values	Decision
<u>Absolute Fit Indices</u>			
Relative χ^2 (χ^2/df)	<3.00	1.340	Satisfied
RMSEA	<0.07	.037	Satisfied
GFI	>0.90	.928	Satisfied
AGFI	>0.90	.904	Satisfied
RMR	Lower the better	.146	Satisfied
HOELTER (.05)	>200	224	Satisfied
<u>Incremental Fit Indices</u>			
NFI	>0.90	.915	Satisfied
TLI	>0.95	.972	Satisfied
CFI	>0.95	.977	Satisfied
PCLOSE	>.50	.952	Satisfied

N=250

B. Results of the Hypothesis One (H1)

In this study determination of Entrepreneurial Cognition (COG) as a predictor of venture growth is somewhat novel to the existing body of literature. Further, some researchers have argued that the existence of gaps in entrepreneurship cognition as well as the venture growth. Therefore, that relationship was assessed as a contribution to the body of knowledge. The model suggested that Entrepreneurial Cognition (COG) acts as a significant predictor (exogenous variable) of venture growth. $\beta=0.80$ implied a significant association at 0.01 level of significance. Hence, the study concludes the COG as a statistically significant predictor of venture growth and in time, the study accepted the hypothesis 1 (H1) under 0.01 level of significance.

C. Analysis of the Hypothesis Two (H2)

There are two methods to analyze the moderating effects in AMOS, such as interaction moderation and multi group moderation. Multi group moderation is more suitable for the complicated model which having more latent constructs since in such situation's interaction terms would cause problems with model convergence as well as distortion of standard errors. Hence, in this study model all the exogenous variables are latent constructs, researchers performed multi group moderation to analyze the moderating effects.

Classification Learning of an entrepreneur comprises of three latent factors namely entrepreneurial experiences, industry experiences and higher education. Those latent constructs were totaled and the unobserved variable of Learning was created in SPSS by the researchers and in fact it was a dichotomous variable. This moderator variable was categorized into two groups based on the answers of the desired moderator and the data, which got zero (no) was coded as low values of the moderator. Thereafter, the constrained models and unconstrained models were compared and conclusions were made (Wang, 2008; Zhao and Cavusgil, 2006). These differences were compared to the Chi-Square values through the Chi-Square Difference Test Excel spreadsheet.

D. Results of the Hypothesis Two (H2)

The Chi-Square Difference Test Excel spreadsheet concluded that the groups are not invariant. In other words, high level of learning and low level of learning groups are different at model level by having the significantly different Chi-Square ($p=0.088$). Based on the regression weights in the path model the relationship between COG and Growth among high learning groups (0.83) are stronger compared to low learning group (0.78). Based on the above results, researchers concluded that Learning moderated the model; therefore, the study accepted the hypothesis 2 (H2) under 0.05 level of significance.

E. Analysis of the Sub Hypotheses

Subsequently, the researchers proceeded to achieve the sub hypotheses, which are the direct effects of four cognitive dimensions to venture growth as stated below. By the intention of analyzing the direct effects of cognitive dimensions, researchers changed the existing structural model by excluding the unobserved construct of cognitive factors (COG) from the model. Since the measurement model has been validated, researchers only

tested the model fit indices of the changed model. Figure 3 illustrates the structural model and Table 3 depicts the model fit indices adding after the suggested modification indices. All the model fit indices have reached above the cut off level by indicating the acceptable model fit of structural model.

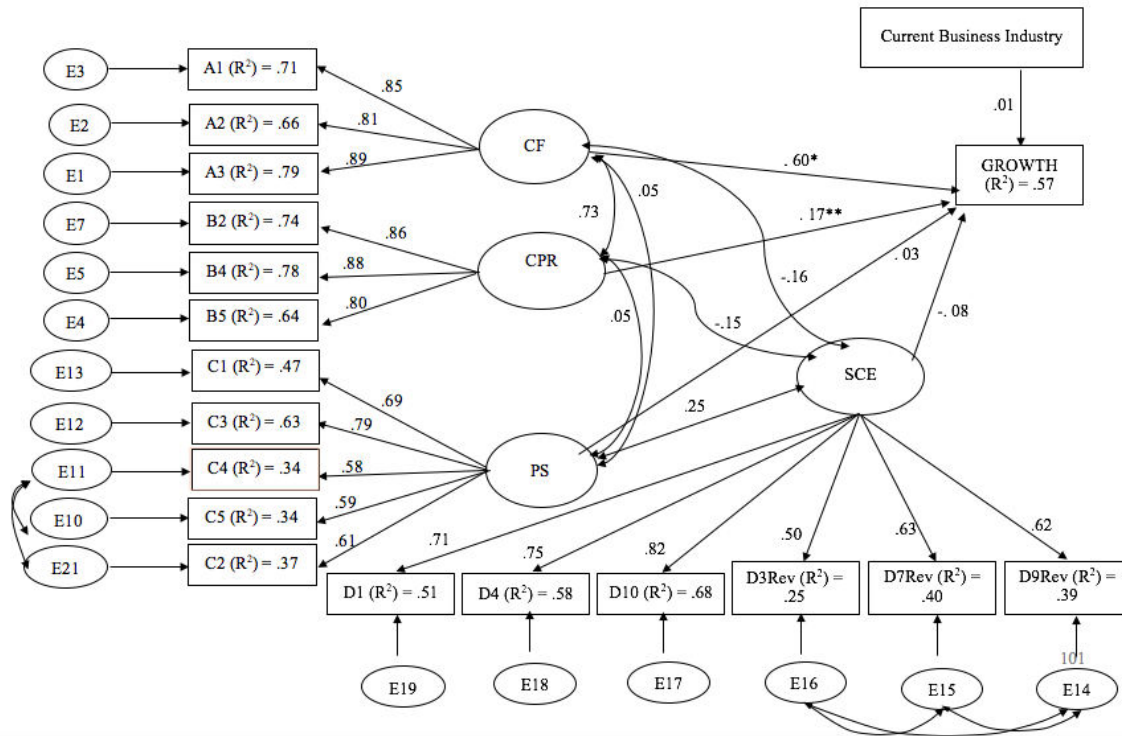


Figure 3. Standardized estimates of the changed model

Table 3. Absolute and incremental fit indices of the changed model

Indices	Cutoff values and acceptable threshold	Modified model values	Decision
<u>Absolute Fit Indices</u>			
Relative χ^2 (χ^2/df)	<3.00	1.262	Satisfied
RMSEA	<0.07	.032	Satisfied
GFI	>0.90	.933	Satisfied
AGFI	>0.90	.908	Satisfied
RMR	Lower the better	.126	Satisfied
HOELTER (.05)	>200	238	Satisfied
<u>Incremental Fit Indices</u>			
NFI	>0.90	.923	Satisfied
TLI	>0.95	.976	Satisfied
CFI	>0.95	.983	Satisfied
PCLOSE	>.50	.983	Satisfied

N=250

F. Results of the Sub Hypotheses

H1a: As per the results $\beta=0.17$ implied a significant association at 0.05 level of significance. According to path coefficient values and those associated significances of the two variables, researchers concluded that Contrasting Perception of Risk (CPR) has a significant direct positive impact on venture growth and therefore sub hypothesis (H1a) was accepted.

H1b: As per the results $\beta=0.60$ implied a significant association between two constructs. According to Kline's effect size criteria of path coefficients values between the Counterfactual Thinking (CF) and venture growth associated with large effect reporting the highest β value out of all four dimensions. Therefore, researchers concluded that CF has a significant direct positive impact on venture growth and therefore sub hypothesis (H1b) was accepted.

H1c: According to the regression weight's value $\beta=0.03$ implied positive association between two constructs but rendering to the Kline's effect size criteria, that has only small effect. Based on that, researchers concluded that the Processing Style (PS) was not a significant predictor for the venture growth. Therefore, sub hypothesis (H1c) was rejected.

H1d: According to the results $\beta=-0.08$ implied a negative but small impact as per the Kline's effect size criteria of path coefficients. Same time p value of the Susceptibility to Cognitive Errors (SCE) and growth relationship indicated non-significant relationship. Therefore, researchers concluded that SCE was not a significant predictor for the venture growth and sub hypothesis (H1d) was rejected.

V. DISCUSSION

In the field of entrepreneurship research there is a burning question still remaining without satisfactory answer: why some entrepreneurs become successful and others fail? The central to the entrepreneurship research is believed that people are different and that difference matters throughout the entrepreneurial process. Purpose of this study mainly focuses on the different cognitive factors of entrepreneurs which are believed to be different among the high success entrepreneurs and low success ones. Thus, this study acknowledged Baron's (2004) four-dimensional proposed framework for COG and venture growth relationship. The rationalization of COG as a predictor of venture growth has been supported by many researches (Gatewood, Shaver and Gartner, 1995; Michell et al., 2002). Neck, Neck, Manz and Godwin (1999) suggested that constructive utilization of cognitive factors/strategies of entrepreneurs will enhance the performance. Robert A. Baron throughout his research works confirmed that individual differences are much more important than personal traits and identifying non-personal individual differences in entrepreneurial thinking is much more fruitful. Understanding the nature of entrepreneurial thinking is central to understanding both entrepreneurs and entrepreneurship. Hence, cognition research brings the entrepreneur back into entrepreneurship in productive new directions (Krueger, 2003).

The study results extend the empirical inferences of COG and performance is positively related as suggested by many scholars (Baron, 1998, 2000; Ron Mitchell et al., 2000; Gaglio, 1997; Gaglio and Katz, 2001; Shepherd and Douglas, 1997 cited in Krueger, 2003). This scenario favors the conclusion that entrepreneurs are "made" not "born", since cognitive capabilities can be learned and improved throughout the individuals' life (Mitchell, Smith, Seawright and Morse, 2000). Therefore, this high failure rates can be assumed as a cause of wrong risk calculation, negative regretful thoughts, lower entrepreneurial education and absence of proper decision making to run the venture and thereby to grow subsequently. Therefore, the researchers suggested that if this problem is addressed systematically and through the appropriate training and guidance venture performance could be increased.

A. Significant Cognitive Factors of Venture Growth

Based on the sample study results, CPR-growth relationship and CF-growth relationship have been accepted, whereas PS-growth relationship and SCE-growth relationship have been rejected.

However, more research has suggested that entrepreneurs need adequate gauge of the risk involved in case their biases lead them to encounter unforeseen difficulties. It is important to recognize the fact that accurate risk perception is not all about assuming the entire risk that the venture encounters. Rather it is about assuming a calculated risk. CPR mean value 2.47 suggested that majority of the entrepreneurs in the study sample have average perceived risk and their standard deviation value 0.447 suggests their deviation between point 2 and 3. This average mean value and SD value implied that participants' risk perception not biased towards high or low risk perception. Furthermore, SEM study results $\beta=0.17$ implied that medium effect with 0.05 level of significance. Therefore, this can be concluded as accurate or close to accurate level of risk perception has a positive impact towards the venture growth.

Cognitive biases as an exogenous variable in venture performance have concluded different views. On the other hand, there are dozens of cognitive biases indicated by previous literature that may affect entrepreneurs' decision-making process. Baron (2004) has suggested optimistic bias, planning fallacy and affect infusion may play a role in entrepreneurs' success. Out of these three biases this study utilized only the optimistic bias to evaluate the SCE and venture growth relationship due to the time limitation. However, the study results have

shown a small negative effect by confirming Baron's suggestions. Though result was not significantly related to the venture growth ($\beta=-0.08$, NS). However, the lack of a significant relationship between SCE and the venture growth may have occurred because the survey measured SCE in a specific perspective. Future research, therefore, should explore the questions in this study using other operationalization of SCE. Structured decision-making frameworks, such as decision trees and risk assessment models, help entrepreneurs mitigate biases and make informed strategic choices (Cote, 2020).

It is suggested that successful entrepreneurs adjust their decision-making style across heuristic and systematic rendering to the situation, and that's what makes them grow. Processing style mean value 4.03 indicated that majority of the entrepreneurs in the sample choose systematic processing style in their decision-making process. Same time SEM analysis results have shown very small positive effect for the venture growth and results were highly insignificant ($\beta=0.03$, $p=0.521$). Therefore, researchers have concluded as no significant positive impact between processing styles and venture growth. One possible explanation for this insignificance can be drawn, as study sample favored towards the systematic processing style. Because here researcher's argument was there is no one best decision-making process, which serves for all the situations. Hence, if sample is unbiased (mean value close to the average 2.5) the study results might be different. Future research, however, needs to explore these issues further using other operationalization of processing style.

Individuals benefit CF by reflecting on alternative pathways to pivotal turning points but increase anxiety and stress. But engaging in such thoughts helps individuals to increased awareness about the causes of disappointing outcomes (Roese, 1997). Those thoughts, in turn suggest new strategies for improving future performance and avoiding costly mistakes. Therefore, to the extent entrepreneurs engage in counterfactual thinking obtain these benefits, which make them more successful. In this study researchers have established a strong link between Counterfactual Thinking and the venture growth relationship ($\beta=0.60$, $p=0.00$) by confirming Baron's suggestion.

B. The Moderating Effect of Entrepreneurial Learning

Many scholars have accepted that entrepreneurial learning is vital since through learning that entrepreneurs develop and grow (Holcomb, Ireland, Holmes and Hitt, 2009). One crucial impact of cognition focused research into entrepreneurship is that it helps to understand the "why" of entrepreneurial thinking in such ways, conversely learning helps "how" to direct those cognitions in fruitful manner. Study results support for Hypothesis 2, the suggestion that high learning entrepreneurs experience higher venture growth compared to the low learning ones and two groups differ significantly in this aspect. Hence, learning moderates the cognitive factors and venture growth relationship. Furthermore, this confirms, "Entrepreneurs are born not made" as a myth. To increase the quality and quantity of potential entrepreneurs requires increasing the quality and quantity of entrepreneurs' thinking. Therefore, formal training, teaching program does seem to matter (Peterson and Kennedy, 2002 cited in Krueger, 2003). This clearly suggests that measures of structures or other possibilities can be usefully deployed to research how entrepreneurial thinking changes across a training program and increase venture performance.

VI. CONCLUSIONS AND RECOMMENDATIONS

Drawing on the large body of findings about human cognition may provide entrepreneurship researchers with several new and useful conceptual tools, which they can apply to the unique set of issues and questions in the field. Furthermore, cognitive perspective might aid in the development of techniques designed to assist entrepreneurs in various ways especially, in avoiding the errors and pitfalls described earlier in this study. Therefore, the goal of studying the role of cognitive mechanisms in entrepreneurship is primarily that of formulating means for holding errors in check from the cognitive mechanisms, so that the decisions reached by entrepreneurs, and the strategies they adopt, have increased chances of success. Researchers wanted to emphasize here that successful entrepreneurs are not the ones who conduct totally logical assessments of all possible risks and benefits, but rather ones who increase the chances that they and their societies will flourish.

We suggest that training entrepreneurs in various techniques for reducing such tendencies might yield highly beneficial results. In a similar manner, entrepreneurs could be taught tactics that would assist them to accurate use of Counterfactual Thinking, Processing Style, Contrasting Perception of Risk, and Susceptibility to Cognitive Bias. To the extent the impact of such tendencies is moderated, entrepreneurs might then be better able to accurately appraise the potential of specific opportunities, and strategies, which leads them to success. It may also contribute to the development of effective interventions for assisting practicing entrepreneurs.

In concluding, wide ranges of cognitive factors play a role in entrepreneurs' success by making better entrepreneurs who think wisely. Moreover, many factors other than cognitive ones influence entrepreneurs' actions and decisions and these, too, must be carefully considered. Finally, consider the question of what individual factors affect venture growth and why majority of venture fails while some reach their peak. Many factors certainly play a role, but from a cognitive perspective, such processes as accurate risk perception, accurate decision making, an ability to switch back and forth between heuristic and systematic processing as the

need arises, avoidance of cognitive biases, and perhaps even rapid processing all play a role. Again, as described in this study provide the means for investigating such questions.

VII. LIMITATIONS OF THE STUDY AND FUTURE DIRECTIONS

Several limitations in the study suggest opportunities for future research. First, although researchers attempted to build the relationship between cognitive factors and venture growth as closely as possible, there are other cognitive biases that Baron (2004) has suggested that low successful entrepreneurs may fall into such as planning fallacy and affect infusion. Though in this study researchers have taken into consideration only the optimistic bias due to the time restriction and the nature of the sample. Therefore, future research must take all these cognitive biases and other cognitive factors into consideration.

Another limitation of the present research is that all the data collected are based on the events that had occurred in the past. Memory is subject to considerable distortion and change over time. To minimize such effects future research could employ procedures in which participants are presented with various situations and asked to list the thoughts they generate as they consider these situations.

The study was conducted only by using the sample of entrepreneurs who have registered under the small enterprise development division. Majority of the entrepreneurs in the population are operating in small and medium scale. The entrepreneurs who do operations in large scale over a long period would have been ideal to compare and analyze the cognitive differences.

VIII. IMPLICATIONS FOR ENTREPRENEURS

Entrepreneurs need to be more realistic about amount of risk involved, accurate understanding about their past mistakes, most suitable decision-making process and keep control over different cognitive errors. Therefore, more effective approach may be to train entrepreneurs to self-regulate their cognition in ways that permit them to be realistic as well as positive to recognize when they need to constrain their enthusiasm and when they can move more energetically. Hence, entrepreneurs should pay attention to how their inherent cognitive factors interact with their experience and environment to influence their ability to achieve successful outcomes. The safeguards could be established through group decision-making techniques. Similarly, entrepreneurs may need to seek and pay attention to the advice of industry specialists.

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