



AN ENTREPRENEURSHIP RESEARCH IN SINGAPORE: BASIC PSYCHOLOGICAL NEEDS AND MOTIVATION

Chen Sheng¹⁺
Felicia Poon²

¹Associate Professor & Dean, Business school of Tianshi College, Cui Heng Road 128 Tian Jin, China.

Email: chsh7209@yahoo.com.sg Tel: (+86)18222792906

²Head of Program & Policy, Academic Excellence Driven by iNovatiOn, 14A/18A Jalan Leban Road, Singapore.

Email: feliciapoon@aedno.com Tel: (+65)91821138



(+ Corresponding author)

ABSTRACT

Article History

Received: 12 November 2018

Revised: 20 December 2018

Accepted: 25 January 2019

Published: 18 March 2019

Keywords

Entrepreneurship

Start-up

Entrepreneur

Basic psychological need

Motivation.

Start-up entrepreneur.

JEL Classification:

L26, M13.

At the initial stages of starting a company, one who sets up the business and business deals is a start-up entrepreneur. This research focuses on entrepreneurs in start-up companies and explores how certain psychological needs influence motivation at the start-up stage. Basic Psychological Needs Theory is the latest and central theory from the SDT (Self-Determination Theory) (Deci and Ryan, 2000;2002). Jian *et al.* (2012) pointed out that psychological need is a critical factor in connecting the external environment and internal individuality. Additionally, entrepreneurial motivation is a precondition for entrepreneurship. Recent research suggests that motivation is an important role in entrepreneurial behavior and success where motivation has influenced entrepreneurs to start a business (Virginia and Carlos, 2012). The research looks at the relationship between the psychological need and motivation of candidates of start-up in Singapore utilizing positivist approaches. Multiple regression analysis was used to analyze a causal relationship between psychological need and entrepreneurial motivation. Results found that there was a statistically significant relationship between two concepts.

Contribution/Originality: The paper's primary contribution is finding that relationship between the basic psychological need and entrepreneur motivation in Singapore. Thinking about the causation of two concepts, this study has analyzed the impact of the psychology in the field of entrepreneurship.

1. INTRODUCTION

There are some research blanks in the field of the relationships of entrepreneurship and psychology. This paper will be showed whether there are certain relationships between Basic Psychological Need and Entrepreneurial Motivation. It will affect the future direction in proceeding of entrepreneurship to study the influences in different types of Basic Psychological Need and Entrepreneurial Motivations. Applying the research results, researcher hopes to figure out this result with proper research methods and clarify the resource of entrepreneurial motivation before start up. Thus, the problem of the research is to find out the relations between these two concepts. Relations can be made more scientific and theoretical. The defined relationships can serve to the candidate of entrepreneurs.

Variations among people in their willingness and ability to act have been found to have an important effect on the entrepreneurial process (Shane *et al.*, 2003). The various types of motivation from entrepreneurs influence their decision to start a business, such as intrinsic and extrinsic (Virginia and Carlos, 2012). The resource of the

behaviour is from the various types of motivation. However, where is motivation of start-up from? Especially, there is a huge gap in research between with psychological need and motivation in the field of entrepreneurship. Thus, the focus of this research is to find out about the relationship between these two concepts. The researcher predicts that there will be a relationship between the two concepts which be explored the correlation and causation in the field of entrepreneurship.

2. LITERATURE REVIEW

2.1. Basic Psychological Need

For a long time, psychological need theory make a huge development from traditional need theory. Initially, such as the expectancy theory pertain to traditional need theory, based on the idea that behavior is always purposeful and goal directed (Tolman and Honzik, 1930). As an individual's preference for various outcomes. Valence is defined as the personal attractiveness of diverse outcomes. If an outcome such as a promotion has a positive valence, the employee would be strongly pulled to those behaviors which make that outcome more likely (Dailey, 1990).

Maslow's hierarchy of needs represents the traditional needs theory. Maslow (1943) emphasized that an individual will pursue higher-level needs after he or she has achieved low-level needs. In the hierarchy, the five levels of needs are as below, with physiological needs being the lowest level-need and Self-actualization being the highest- level need:

- 1) Physiological, including food, water, shelter, and warmth.
- 2) Safety, the needs for security, stability and a safe work environment.
- 3) Belongingness, the needs to experience social interaction, friendship and love
- 4) Self-esteem, the needs to feel good about oneself and one's abilities and to be respected and approved by others.
- 5) Self-actualization, the needs to reach one's fullest potential including pursue inner talent, creativity, and fulfillment.

Alderfer (1969) classified the type of psychological needs based on Maslow's theory. He thinks Existence, Relatedness and Growth are three dimensions in a persons' psychological needs. In contrast, the three types were classified in McClelland (1958;1961) theory including need of achievement, need of power and need of affiliation. He pointed out persons possess one need at least and be driven by need regardless of age, sex, race or culture.

The Self-Determination Theory (SDT) represents a broad framework towards the study of motivation – how to get themselves or even others to act and behave in a certain manner (Deci *et al.*, 1994). This theory postulates that a variety of intrinsic and extrinsic factors act as a source of motivation for individuals that drives them towards social and cognitive development (Deci and Ryan, 2000). SDT proposes that the three conditions which resulted in the highest quality of motivation were the satisfaction of: the need for competence, the need for autonomy and the need for relatedness. The need for autonomy emphasizes the individual's sense of existence in activities where behavior is done or shown willingly (Broeck *et al.*, 2010; Meyer and Maltin, 2010). The need for competence emphasizes the individuals' self-value in activities. People typically want to feel effective and be affirmed by others (Broeck *et al.*, 2010; Meyer and Maltin, 2010). The need for relatedness emphasizes the individual's pursuit of respect, care and dependence. They are eager to build and foster meaningful relationships and interact with others (Deci *et al.*, 2001). The degree in which these basic psychological needs are satisfied is a decisive factor towards self-motivation and self-decision (Deci and Ryan, 2000).

2.2. Entrepreneurial Motivation

Entrepreneurial motivations are the driving force encouraging people who have entrepreneurial abilities to start a business (Olson and Bosserman, 1984). Alan and Malin (2011) further argued that entrepreneurial

motivations are an important explanatory mechanism for a variety of entrepreneurial behaviors. This supports the research with regards to success in achieving the goal (Kusurkar *et al.*, 2011).

There are a variety of different types of entrepreneurial motivation and these motivations vary even among different types of entrepreneurs; with one of these types being start-up entrepreneurs. Based on qualitative and quantitative analyses on previous literature, Shane *et al.* (2003) classified motivation into two components - the general and the task-specific. They also divided these two parts into eight motivational factors: the need for achievement, locus of control, vision, desire for independence, passion, drive, goal setting and self-efficacy. Gilad and Levine (1986) pointed out two closely-related explanations of entrepreneurial motivation, the “push” theory and the “pull” theory. The “push” theory refers to the pursuit of wealth acquisition while the “pull” theory refers to career aspirations. Ashley-Cotleur *et al.* (2009) divided motivation into two dimensions based on different reasons or goals that result in a behaviour being acted out: extrinsic motivation and intrinsic motivations. Extrinsic motivation refers to doing an action as it leads to a separable outcome (e.g., wealth), while intrinsic motivation refers to doing something because it is inherently interesting or enjoyable - typically implementing value and growth (Ryan and Deci, 2000). Financial compensation is an extrinsic reward motivation that can motivate innovations (Amabile, 1998) and start-up entrepreneurs with extrinsic motivation tend to pursue money and wealth. Intrinsic motivations are, for example, enjoyment in working in a challenging and innovative task, because people feel passionate about what they are going to do (Chen and Francesco, 2003).

Based on the research exploring entrepreneurial motivation, Kuratko *et al.* (1997) have classified four types of entrepreneurial motivations:

1. Extrinsic reward: Focusing on form of money or shares.
2. Intrinsic reward: Focusing on internal needs and achievement.
3. Need for independence / autonomy: Having the freedom to make decisions.
4. Need for family security: Entrepreneurs provide protection for themselves and their families through their entrepreneurial ventures.

Robichaud *et al.* (2001) refined Kuratko *et al.* (1997)'s scale by adding in new descriptors, including ‘close to home’, ‘protection after retirement’, and ‘improved quality of life’. They pointed out that an important source of entrepreneurial motivation depends on the setting of targets that influenced the entrepreneur’s behaviour and thus indirectly addresses the success of their enterprises through ownership of a business enterprise. Robichaud *et al.* (2001) believe start-up entrepreneurs seek tangible goals through business ownership. Understanding entrepreneurial motivation can determine a start-up entrepreneur’s behavior patterns and ultimately his or her success in running the business. Currently, the measurement model of motivation and improved model of motivation proposed by Kuratko *et al.* (1997) and Robichaud *et al.* (2001)'s respectively have very broad and representative studies about the various types of entrepreneurial motivation. Therefore, this study will employ the four dimensions of Robichaud *et al.* (2001)'s theory: extrinsic reward, independent/autonomous, intrinsic reward, family security.

3. RESEARCH MODEL

The present research aims to investigate how the basic psychological needs in the SDT framework influence entrepreneurial motivation. The different types of basic psychological needs have been operationalized as independent variables with entrepreneur motivation being operationalized as the the dependent variable. The researchers in this study explored the correlation and causal relationship between the independent variables and dependent variables as seen in the following figure.

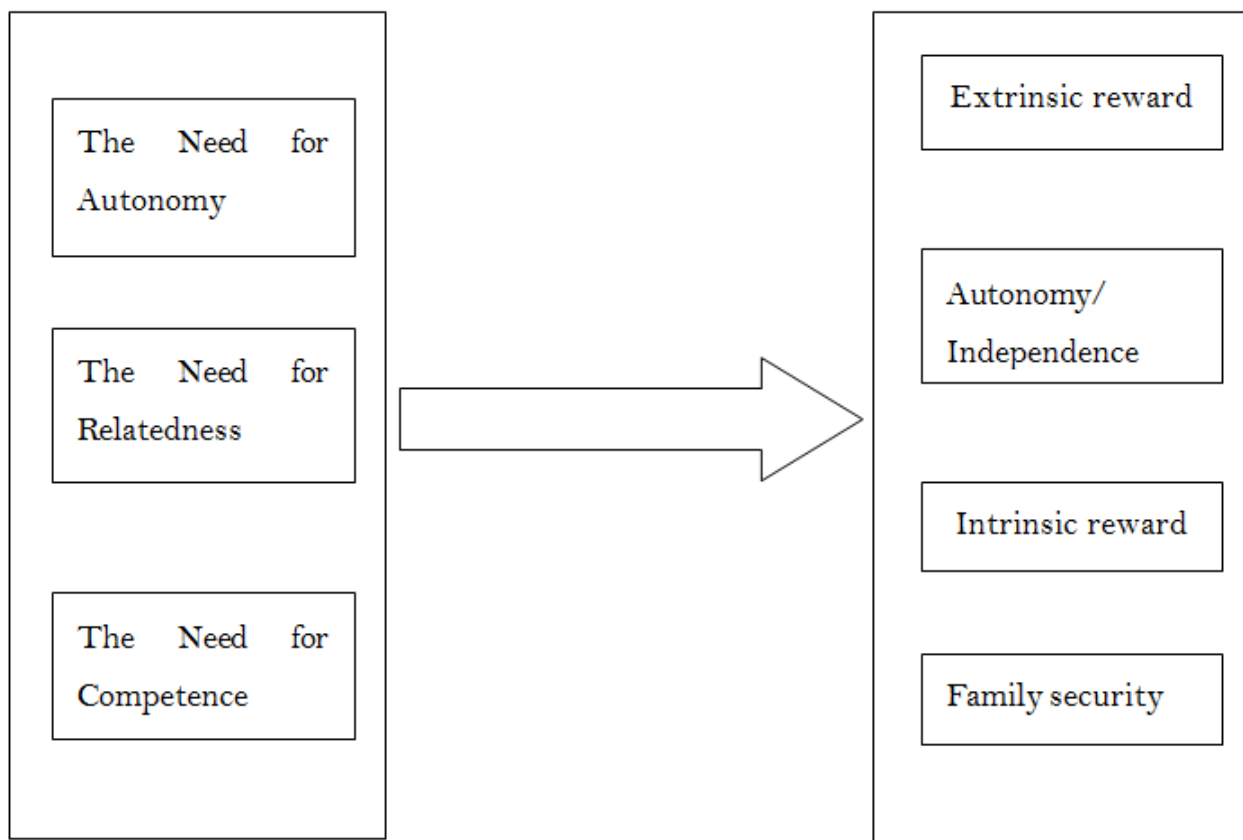


Figure-1. Research Model in Study.

Source: research summary.

4. METHODOLOGY

A post-positivistic framework supports methodological pluralism and post-positivism reflects a deterministic philosophy in which causes probably determine effects or outcomes (Creswell, 2006). This is expressed in the use of both qualitative and quantitative approaches to generate reliable and valid data to be used in analytical research on how certain psychological needs influence entrepreneurial motivation.

Researchers in this study employed a mixed method research design. Firstly, the researchers summarized the concepts and classified the research topics based on the previous literature. Secondly, the researchers also proposed a hypothesis based on literature review. Thirdly, the researchers investigated the hypothesis based on the sample and validated the hypothesis through a quantitative approach. This study will investigate the validity and reliability of Basic Psychological Needs and Entrepreneurial Motivation utilizing surveys and interviews.

The study focused on start-up entrepreneurs in Singapore and employed two questionnaires. One pertained to Basic Psychological Needs and its three subsets (Deci *et al.*, 1994) and the other pertained to entrepreneurial motivation and its four subsets (Kuratko *et al.*, 1997; Robichaud *et al.*, 2001). Both questionnaires were then analyzed for their reliability and validity, and then sent out to 236 start-up entrepreneurs in Singapore. A total of 131 valid responses were received and used for statistical analysis.

5. IMPLEMENTATION OF RESEARCH

The primary statistical analyses include analyzing the reliability and validity analysis of the data collected. Multiple regression analysis was deployed to learn about the relationship between several independent (predictor) variables and a dependent (criterion) variable.

5.1. Description of the Responses

(a) Gender

Previous studies found that women were less likely to start a business (Reynolds and Curtin, 2008; Verheul *et al.*, 2010). Within the sample, 74 participants were males and 57 participants were females. Because the survey was distributed randomly, based on the surveys returned, the proportion of males should be higher around the survey areas.

(b) Age

Among the questionnaires, 94 participants were between the ages of 20 and 30; 25 participants between ages 30 and 40; and 12 participants' between 40 and above 50.

(c) Education background

Within the sample population, 64 participants attained a diploma, 51 participants attained a Bachelors degree, and 14 participants attained a Masters degree as their highest education qualification respectively. Based on the demographic profile of the participants, most start-up entrepreneurs obtained a Diploma and Bachelor's degree in Singapore.

(d) Position in Company

Among the participants, 80 participants had a junior executive role in their company, 37 participants had a senior executive role and 14 participants were with a management role in their company. The people who were in junior executive positions tended to want to start a new business. Table 1 presents the statistic form of responses.

Table-1. Statistic of Sample Description.

Item	Variable	Number of people	Percent
Gender	Male	74	56.5
	Female	57	43.5
Age	20-30	94	71.8
	30-40	25	19.1
	40-50	12	9.2
Education Background	Diploma	64	48.9
	Bachelor	51	38.9
	Master	16	12.1.2
Position	Based	80	61.1
	Middle	37	28.2
	Senior	14	10.7

5.2. Statistical Analysis Techniques

A linear regression model is created, consisting of a number of explanatory variables, which is used to reveal the linear relationship between outcome variable and other explanatory variables. The mathematical form of a multiple linear regression model is as follows:

$$y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \dots + \beta_px_p + \varepsilon$$

In the formula, there are *p* explanatory variables. The change in outcome variable *y* is explained by two parts: 1) its expectation as a function of *p* explanatory variables, that is, $E(y) = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \dots + \beta_px_p$. 2) Variation due to random disturbance represented by ε . $\beta_0, \beta_1, \beta_2,$ are regression coefficients. ε is random error. β_i can be regarded as the average change in the outcome variable when x_i is changed by one unit and other explanatory variables keep the same. Only if the relationship between the outcome and the covariate is linear, the linear regression model is suitable to reflect the statistical relationship. Usually a hypothesis testing is used to test if there is a significant relation between the outcome and the covariates. The null hypothesis H_0 : is the regression

coefficient β is not significantly different from 0. When $\beta=0$, it means that the change in covariates doesn't cause change in the outcome y and there is no linear relation between x and y . Researcher can use SPSS to calculate the p-value. If p-value is less than the given significance level α , researcher rejects H_0 and the regression coefficient is not zero. The relationship between the covariate and the outcome can be described by the linear regression equation. When the model fitting is improved, the test is more significant. P-value is used to judge the relationship between the covariate and the outcome.

5.3. Construct Validity Analysis

To test the construct validity of the questionnaire, factor analysis (Wu, 2012) using the SPSS 23 as a tool, was carried out. Results from the factor analysis of both the questionnaire items on basic psychological need and entrepreneurial motivation are as follows:

Table-2. KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.677
Bartlett's Test of Sphericity	Approx. Chi-Square	232.683
	df	28
	Sig.	.000

Table-3. Factors Analysis Testing of Psychological Need.

	Component		
	1	2	3
Autonomy1	-.202	.797	.110
Autonomy2	.057	.843	-.093
Relate1	.209	-.087	.888
Relate2	.360	.084	.820
Competence1	.629	-.389	.212
Competence2	.701	.114	.178
Competence3	.717	.114	.092
Competence4	.684	-.252	-.007

KMO is a measure of sampling adequacy and Bartlett Test's of Sphericity testifies whether the correlation matrix is an identity matrix. Both taken together provide a minimum standard before a factor analysis should be conducted. For Basic Psychological need, Table 2 shows KMO value is 0.677 and great than 0.5 (Kaiser, 1974; Fred, 2005). Bartlett's test implies suitability for factor analysis with significance level less than 0.05 (Bartlett, 1950). As is shown in the Table 2, significance level is less than 0.05. The whole eigenvalues of three factors explains 65.657% of total variation. In Table 3, the factor analysis is appropriate in this paper. Results from factor analysis on entrepreneurial motivation are as follows:

Table-4. KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.725
Bartlett's Test of Sphericity	Approx. Chi-Square	641.518
	df	91
	Sig.	.000

In Table 4, the obtained KMO value is 0.725, greater than 0.5 (Kaiser, 1974; Fred, 2005) and the Bartlett's test implies suitability for factor analysis with significance level less than 0.05 (Bartlett, 1950). As shown in the Table 4, significance level is less than 0.05. The research shows that the total eigenvalues of the three factors explained 56.683% of variance. Table 5 shows that factor analysis is appropriate in this paper. According to factors analysis in Table 5, researcher can combine independent and family security with one dimension. It is means that a person pursues independent in the entrepreneurial processing, as same as he or she is going to focus on his family security. The new subset could call independent that includes original dimensions of independent and family security.

Table-5. Factors Analysis Testing of Entrepreneurial Motivation.

	Component		
	1	2	3
Extrinsic1	-.277	.168	.699
Extrinsic2	.273	-.006	.758
Extrinsic3	-.275	.126	.558
Independent1	.144	.696	-.027
Independent2	-.005	.725	-.028
Independent3	.319	.665	-.125
Intrinsic1	.609	.060	-.339
Intrinsic2	.860	-.207	-.026
Intrinsic3	.850	.142	-.052
Intrinsic4	.668	.303	-.123
Intrinsic5	.709	-.233	.149
Family1	-.214	.521	.386
Family2	-.191	.644	.314
Family3	-.247	.573	.378

5.4. Reliability Testing

Reliability is the overall consistency of a measure. Reliability testing seeks to ensure that the various items measuring the different constructs deliver consistent scores. Cronbach's Alpha test was carried out to estimate the reliability of the questionnaire.

For Cronbach's α , a minimum value of 0.70 is considered acceptable for existing scales and a value of 0.60 is seemingly appropriate for newly developed scales (Nunnally, 1978) Based on the results obtained, In Table 6, Cronbach's Alpha is within the range of Nunnally's acceptable reliability coefficient. Analysis of the item-total of the statistics shows that the reliability coefficient, after deleting a certain assessment item, is less than the reliability coefficient by including all of the items. It means the researcher should keep all of these items in the questionnaire.

5.5. The Research Hypotheses

Hypothesis 1 :

There is a correlation between the need for autonomy and motivation of extrinsic reward.

Hypothesis 2:

There is a correlation between the need for autonomy and motivation of independent.

Hypothesis 3:

There is a correlation between the need for autonomy and motivation of intrinsic reward.

Hypothesis 4:

There is a correlation between the need for relatedness and motivation of extrinsic reward.

Hypothesis 5:

There is a correlation between the need for relatedness and motivation of independent.

Hypothesis 6:

There is a correlation between the need for relatedness and motivation of intrinsic reward.

Hypothesis 7:

There is a correlation between the need for competence and motivation of extrinsic reward.

Hypothesis 8:

There is a correlation between the need for competence and motivation of motivation of independent.

Hypothesis 9:

There is a correlation between the need for competence and motivation of intrinsic reward.

Table-6. Testing of Reliability Statistics.

Dimension	Measure factor	Cronbach's Alpha if item deleted	Cronbach's Alpha
The Needs for Autonomy	Autonomy01	0.721	
	Autonomy02		
The Needs for Relatedness	Relatedness01	0.783	
	Relatedness02		
The Needs for Competence	Competence01	0.645	0.760
	Competence02	0.602	
	Competence03	0.714	
	Competence04	0.605	
Extrinsic reward	Extrinsic01	0.698	0.769
	Extrinsic02	0.608	
	Extrinsic03	0.538	
Independent	Independent01	0.709	0.742
	Independent02	0.703	
	Independent03	0.726	
	Independent04	0.714	
	Independent05	0.687	
	Independent06	0.697	
Intrinsic reward	Intrinsic01	0.801	0.809
	Intrinsic02	0.738	
	Intrinsic03	0.735	
	Intrinsic04	0.790	
	Intrinsic05	0.792	

5.6. Statistical Research Based on the Regression Analysis

A linear regression analysis was carried out, based on 131 effective questionnaires to test the correlation between basic psychological need (independent variable) and motivation (dependent variable) in Singapore.

An absolute value of the correlation coefficient is equal to or greater than 0.8 indicates that two variables are highly correlated, an absolute value of correlation coefficient 0.4 to 0.8 means that the correlation is modest, and less than or equal to 0.4 represents a low correlation (Wu, 2012).

Table 7 presents the summary of four results of the multiple regression analysis of basic psychological need on entrepreneurial motivation is given upper. Model one explained that researcher did not find out any correlation or causation among the Gender, Age, Education, Position, and motivation of extrinsic reward,. Model two showed the correlation with Needs for Autonomy and Motivation of Extrinsic Reward. $P < 0.05$ shows that there is significant correlation between these two variables. $R = 0.409$ means that there is a positive correlation between Needs for Autonomy and Motivation of Extrinsic and 16.7% of variance is explained by needs. Hypothesis 1 is accepted. Model three showed the correlation with Needs for Relatedness and Motivation of Extrinsic Reward. $P > 0.05$ shows that there is not significant correlation between these two items. Hypothesis 4 cannot be accepted. Model four showed the correlation with Needs for competence and Motivation of Extrinsic Reward. $P > 0.05$ shows that there is not significant correlation between these two items. Hypothesis 7 cannot be accepted.

In Table 8, Model five explained that researcher did not find out any correlation or causation among Gender, Age, Education, Position and motivation of independent Model six showed the correlation with Needs for Autonomy and Motivation of Independent. $P < 0.05$ shows that there is significant correlation between these two variables. $R = 0.402$ means that there is a positive correlation between Needs for Autonomy and Motivation of Independent and 16.2% of variance is explained by needs. Hypothesis 2 is accepted. Model seven showed the correlation with Needs for Relatedness and Motivation of Independent. $P > 0.05$ shows that there is not significant correlation between these two variables. Hypothesis 5 cannot be accepted. Model eight showed the correlation with Needs for competence and Motivation of Independent. $P > 0.05$ shows that there is not significant correlation between these two items. Hypothesis 8 cannot be accepted.

Table-7. Multiple Regression Analysis (1).

Predict Variable	Motivation of Extrinsic Reward			
	Model 1	Model 2	Model 3	Model 4
Constant	3.877	2.925	4.070	4.048
Gender	-0.019	-0.058	-0.029	-0.020
Age	-0.013	-0.045	-0.009	-0.014
Education	-0.007	-0.029	-0.007	-0.010
Position	0.620	0.160	0.64	0.72
Autonomy		0.254**		
Relatedness			-0.41	
Competence				-0.043
R	-0.065	0.409**	-0.079	-0.029
R Square	0.004	0.167	0.006	0.001
Adjust R Square	-0.027	0.134	-0.034	-0.007
Sig F Change	0.970	0.000	0.978	0.740

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Source: Author's Desk Research from SPSS 23.

Table-8. Multiple Regression Analysis (2).

Predict Variable	Motivation of Independent			
	Model 5	Model 6	Model 7	Model 8
Constant	3.438	2.424	3.639	3.259
Gender	0.119	0.077	0.107	0.121
Age	-0.174	-0.207*	-0.169	-0.173
Education	-0.072	-0.094	-0.071	-0.069
Position	0.025	0.128	0.027	0.014
Autonomy		0.268**		
Relatedness			-0.046	
Competence				0.047
R	-0.156	0.402**	-0.162	0.039
R Square	0.024	0.162	0.026	0.002
Adjust R Square	-0.007	0.128	-0.013	-0.006
Sig F Change	0.535	0.000	0.644	0.659

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Source: Author's Desk Research from SPSS 23.

In Table 9, Model nine explained that researcher did not find out any correlation or causation among the Motivation of Intrinsic, Gender, Education, and Position. However, Age shows some negative correlation with motivation of intrinsic. Model ten showed the correlation with Needs for Autonomy and Motivation of Intrinsic. $P < 0.01$ shows that there is significant correlation between these two variables. $R = -0.362$ means that there is a negative correlation between Needs for Autonomy and Motivation of intrinsic and 13.1% of variance is explained by needs.

Table-9. Multiple Regression Analysis (3).

Predict Variable	Motivation of Intrinsic			
	Model 9	Model 10	Model 11	Model 12
Constant	4.519	5.342	3.126	2.085
Gender	-0.161	-0.127	-0.079	-0.133
Age	-0.227*	-0.200	-0.259*	-0.214*
Education	-0.099	-0.081	-0.102	-0.063
Position	0.149	0.055	0.125	-0.007
Autonomy		-0.218**		
Relatedness			0.316**	
Competence				0.643**
R	0.228	-0.362**	0.359**	0.591**
R Square	0.052	0.131	0.129	0.349
Adjust R Square	0.022	0.096	0.094	0.323
Sig F Change	0.146	0.003	0.004	0.000

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Source: Author's Desk Research from SPSS 23.

Hypothesis 3 is accepted. Model eleven showed the correlation with Needs for Relatedness and Motivation of Intrinsic. $P < 0.05$ shows that there is significant correlation between these two variables. $R = 0.359$ means that there is a positive correlation between Needs for Autonomy and Motivation of intrinsic and 12.9% of variance is explained by needs. Hypothesis 6 is accepted. Model twelve showed the correlation with Needs for competence and Motivation of intrinsic. $P < 0.01$ shows that there is significant correlation between these two variables. $R = 0.591$ means that there is a positive correlation between Needs for Autonomy and Motivation of Intrinsic and 32.3% of variance is explained by needs. Hypothesis 9 is accepted.

A summary of the research model and accepted hypotheses are as follow,

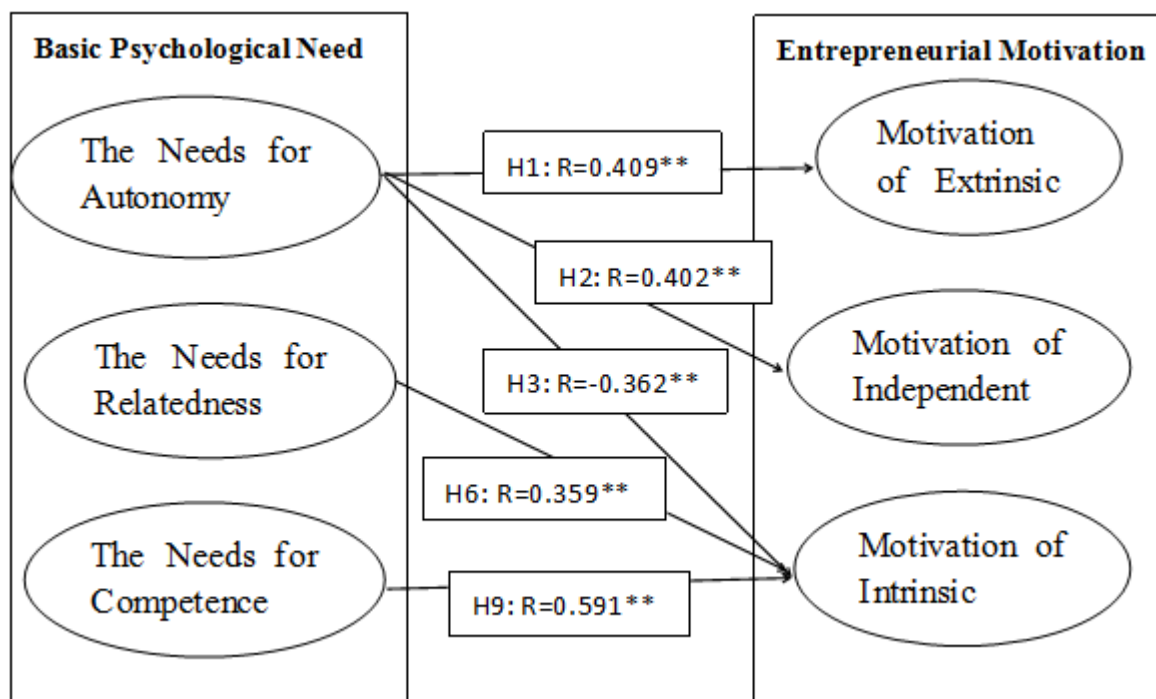


Figure-2. Conclusion of Hypotheses in Research Model.

6. CONCLUSIONS

We can draw the following conclusions from this study between with the Basic Psychological Need and Entrepreneurial Motivation of candidate in start-up in Singapore.

1. Start-up entrepreneurs who possess the need for autonomy generally tend to be motivated to pursue extrinsic rewards. This phenomenon shows that this kind of candidates regard earning wealth and other material needs as the main target of their motivation. Typically, they do not like to embark on more competitive and risky businesses. Their businesses would not make them greater contributors to a society's economic development.
2. Candidates who pursue the need for autonomy is in line with the motivation for independence. Pursuing independence is an aspiration before the individual decides to set up their business, they do not like to be managed or restrained. This is especially true for participants who are older.
3. Start-up entrepreneurs who possess the needs for relatedness are eager to be respected, gain more friends, and receive praise from society. They also tend to be more intrinsically motivated. This may indicate that they would like to aspire to be competent to obtain the relatedness which they seek.
4. In line with the above, candidates who want to set up their business who possess the need for competence tend to be intrinsically motivated. They seem willing to embark on more competitive, risky and more innovative in future. As the main target of motivation, they think that contributing society's economic development is more important than earn wealth and other material needs.

7. LIMITATIONS OF THE RESEARCH

The main drawback of this study is the exclusion of the larger context of the socio-historical world and macro-economic of candidate in a start-up. These include the trends of economic development, national policies, business conditions, regional differences, competitive market conditions and other external environmental factors that have a bearing on the entrepreneurial situation.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Contributors/Acknowledgement: Both authors contributed equally to the conception and design of the study.

REFERENCES

- Alan, C. and B. Malin, 2011. Entrepreneurial motivations: What do we still need to know? *Journal of Small Business Management*, 49(1): 9-26. Available at: <https://doi.org/10.1111/j.1540-627x.2010.00312.x>.
- Alderfer, C.P., 1969. An empirical test of a new theory of human needs. *Organizational Behavior and Human Performance*, 4(2): 142-175. Available at: [https://doi.org/10.1016/0030-5073\(69\)90004-x](https://doi.org/10.1016/0030-5073(69)90004-x).
- Amabile, T.M., 1998. *How to kill creativity: Keep doing what you're doing. Or, if you want to spark innovation, rethink how you motivate, reward, and assign work to people.* Boston, MA: Harvard Business School Publishing, 87: 77-87.
- Ashley-Cotleur, C., S. King and G. Solomon, 2009. Parental and gender influences on entrepreneurial intentions, motivations and attitudes. Available from <http://usasbe.org/knowledge/proceedings/proceedingsDocs/USASBE2003proceedings-12pdf> [Accessed March 10, 2009].
- Bartlett, M.S., 1950. Tests of significance in factor analysis. *British Journal of Psychology*, 3(2): 77-85.
- Broeck, V.D.A., M. Vansteenkiste, H. De Witte, B. Soenens and W. Lens, 2010. Capturing autonomy, competence, and relatedness at work: Construction and initial validation of the work-related basic need satisfaction scale. *Journal of Occupational and Organizational Psychology*, 83(4): 981-1002. Available at: <https://doi.org/10.1348/096317909x481382>.
- Chen, Z.X. and A.M. Francesco, 2003. The relationship between the three components of commitment and employee performance in China. *Journal of Vocational Behavior*, 62(3): 490-510. Available at: [https://doi.org/10.1016/s0001-8791\(02\)00064-7](https://doi.org/10.1016/s0001-8791(02)00064-7).
- Creswell, J.W., 2006. Understanding mixed methods research. In Creswell, J.W. & Plano-Clark, V. (Eds.), *Designing and Conducting Mixed Methods Research.* Thousand Oaks: Sage Publications, Inc. pp: 1-19.
- Dailey, R., 1990. *Organizational behaviour.* Edinburgh: Business School, Heriot-Watt University Publications.
- Deci, E. and R.M. Ryan, 2002. *Handbook of self-determination research.* Rochester; NY: University Rochester Press.
- Deci, E.L., H. Eghrari, B.C. Patrick and D.R. Leone, 1994. Facilitating internalization: The self-determination theory perspective. *Journal of Personality*, 62(1): 119-142. Available at: <https://doi.org/10.1111/j.1467-6494.1994.tb00797.x>.
- Deci, E.L. and R.M. Ryan, 2000. The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4): 227-268. Available at: https://doi.org/10.1207/s15327965pli1104_01.
- Deci, E.L., R.M. Ryan, M. Gagné, D.R. Leone, J. Usunov and B.P. Kornazheva, 2001. Need satisfaction, motivation, and well-being in the work organizations of a former eastern bloc country: A cross-cultural study of self-determination. *Personality and Social Psychology Bulletin*, 27(8): 930-942. Available at: <https://doi.org/10.1177/0146167201278002>.
- Fred, P., 2005. *Evaluating research in academic journals: A practical guide to realistic evaluation.* 3rd Edn., Glendale; CA: Pyrecak Publishing.
- Gilad, B. and P. Levine, 1986. A behavioral model of entrepreneurial supply. *Journal of Small Business Management*, 24(4): 45-53.

- Jian, Z., Z. Wei and E.L. Deci, 2012. Basic psychological needs and job satisfaction: Which is the better to predict work performance? *Management Review*, 24(6): 98-132.
- Kaiser, H.F., 1974. An index of factorial simplicity. *Psychometrika*, 39(1): 31-36. Available at: <https://doi.org/10.1007/bf02291575>.
- Kuratko, D.F., J.S. Hornsby and D.W. Naffziger, 1997. An examination of owner's goals in sustaining entrepreneurship. *Journal of Small Business Management*, 35(1): 24-34.
- Kusurkar, R., T.J. Ten Cate, M. Van Asperen and G. Croiset, 2011. Motivation as an independent and a dependent variable in medical education: A review of the literature. *Medical Teacher*, 33(5): e242-e262. Available at: <https://doi.org/10.3109/0142159x.2011.558539>.
- Maslow, A.H., 1943. A theory of human motivation. *Psychological Review*, 50(4): 370-396.
- McClelland, D.C., 1958. Methods of measuring human motivation. In J. W. tkinson (Ed.), *Motives in fantasy, action, and society*. Princeton, NJ: D. Van Nostrand Company, Inc. pp: 7-42.
- McClelland, D.C., 1961. *The achieving society*. New York: The Free Press.
- Meyer, J.P. and E.R. Maltin, 2010. Employee commitment and well-being: A critical review, theoretical framework and research agenda. *Journal of Vocational Behavior*, 77(2): 323-337. Available at: <https://doi.org/10.1016/j.jvb.2010.04.007>.
- Nunnally, J., 1978. *Psychometric theory* New York: McGraw-Hil.
- Olson, P.D. and D.A. Bosserman, 1984. Attributes of the entrepreneurial type. *Business Horizons*, 27(3): 53-56. Available at: [https://doi.org/10.1016/0007-6813\(84\)90027-2](https://doi.org/10.1016/0007-6813(84)90027-2).
- Reynolds, P.D. and R.T. Curtin, 2008. Business creation in the United States: Panel study of entrepreneurial dynamics II initial assessment. *Foundations and Trends® in Entrepreneurship*, 4(3): 155-307. Available at: <https://doi.org/10.1561/03000000022>.
- Robichaud, Y., E. McGraw and R. Alain, 2001. Toward the development of a measuring instrument for entrepreneurial motivation. *Journal of Developmental Entrepreneurship*, 6(2): 189-199.
- Ryan, R.M. and E.L. Deci, 2000. Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1): 54-67. Available at: <https://doi.org/10.1006/ceps.1999.1020>.
- Shane, S., E.A. Locke and C.J. Collins, 2003. Entrepreneurial motivation. *Human Resource Management Review*, 13(2): 257-279.
- Tolman, E.C. and C.H. Honzik, 1930. *Insight in rats*. Berkeley: Published by University of California Press. pp: 215-232.
- Verheul, I., R. Thurik, J. Hessels and V.D.P. Zwan, 2010. Factors influencing the entrepreneurial engagement of opportunity and necessity entrepreneurs. *EIM Research Reports H*.
- Virginia, B. and A. Carlos, 2012. Entrepreneurial behavior: Impact of motivation factors on decision to create a new venture. *Investigaciones Europeas*, 18(2): 132-138. Available at: [https://doi.org/10.1016/s1135-2523\(12\)70003-5](https://doi.org/10.1016/s1135-2523(12)70003-5).
- Wu, M.L., 2012. *SPSS statistical applications*. Da Lian. Published by Dongbei University of Finance and Economic Press. China.

Views and opinions expressed in this article are the views and opinions of the author(s), International Journal of Business, Economics and Management shall not be responsible or answerable for any loss, damage or liability etc. caused in relation to/arising out of the use of the content.