

Psychological Need Satisfaction as a Pre-determinant of Entrepreneurial Intentionality

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Abstract

Drawing from self-determination theory, this study investigated the influence of psychological need satisfaction as a determinant of entrepreneurship personality profile, thereafter a pre-determinant of entrepreneurial intentionality. Data was collected on a sample of 407 Chinese undergraduate students from four universities in Hefei-Anhui China. The results of structural equation modeling revealed that the satisfaction of each three psychological needs: autonomy, competence and relatedness was a significant positive predictor of entrepreneurship personality profile and altogether contributed to its variance. Entrepreneurship personality profile was a significant positive predictor of entrepreneurial intention at 67% variance. The study concludes with some theoretical and practical recommendations.

Keywords: Psychological need satisfaction; Proactive personality; Entrepreneurial intention; Personal development; Career development

Introduction

The role of entrepreneurs in making the world economically dynamic is no longer deniable [1-4]. Consequently, societies are desperately eager to produce even more entrepreneurs. Several countries have established some major policies to increase revenue based entrepreneurship. China for instance, in 1980 has set up some mechanisms through which ventures based technology were financed, either from the government directly or through universities and state-owned companies [5]. Among other policies, many universities have included entrepreneurship modules in their curriculum. America, for example, had more than 1600 schools offering more than 2200 courses in entrepreneurship education by 2003 [6]. Obviously, financial funding could be among key stimulus of start-ups. Also, entrepreneurship curriculum introduces individuals to a number of important skills needed in entrepreneurship careers, including negotiation, leadership, new product development, creative thinking, exposure to technological innovation, sources of venture capital, idea protection [7]. Yet, the courage to embark on entrepreneurship career journey takes more than financial capitals and entrepreneurship modules.

Since the evolution of entrepreneurship research, studies have been carried out about the most significant personal characteristics influencing entrepreneurial behavior in people. Studies have found that some psychological characteristics including need for achievement, ambiguity tolerance [8] locus of control, self-esteem propensity to take risk [9], innovativeness and self-esteem [10,11] are associated with entrepreneurial behavior and altogether define what is often referred as an individual's "entrepreneurship personality profile". The latter has been also evidenced to have a significant link with entrepreneurs' success [12]. Moreover, employees with high to moderate entrepreneurship profile are believed to behave entrepreneurially in their organizations and hence have high probability to attain high job performance [13]. When and how these referred characteristics come to develop within people is yet a subject of academic debates and scientific researches. Although scholars have argued that these psychological traits can be acquired and developed within people throughout their lifespan [14-16] there is still scarce about the mechanisms through which those so called entrepreneurial psychological traits develop. In this study, we applied self-determination theory (SDT) and tested psychological need satisfaction (competence satisfaction, autonomy satisfaction and relatedness satisfaction) as determinant of entrepreneurship

personality profile and pre-determinant of entrepreneurial intention. According to STD human beings are born with some psychological needs, competence, Autonomy and Relatedness. The theory argues that when these three needs are satisfied, individuals have an enthusiastic view about the world and are intrinsically motivated to pursue life at its fullest [17]. Our study is guided by the assumption that: "as the more people perceive psychological need satisfaction the higher the likelihood to develop psychological characteristics of entrepreneurship and thus lead to entrepreneurial intentions".

Psychological characteristics of entrepreneurship personality profile

1) Need for Achievement: need for achievement has been identified at the very beginning of entrepreneurship research as a significant predictor of entrepreneurial behavior. People with higher need for achievement are goal-oriented and have strong desire for success [18,19]. Therefore, they are more likely to behave entrepreneurially. (2) Internal Locus of Control: refers to the extent to which people believe in their abilities to control things/events that happen in their lives as opposed to those who put blame on external forces or fate [20]. People who score high on internal locus of control are likely to have a higher performance than those who do not [21]. (3) Propensity to Take Risk: has to do with making decisions in uncertain situations. Risk propensity is positively associated with entrepreneurship character because people who score high on it are likely to dare and hence their chances of discovering opportunities are very high [22,23] (4) Tolerance of Ambiguity: refers to emotional reactions an individual would express when faced with unfamiliar situations. People with a low tolerance of ambiguity have a tendency to avoid ambiguous situations and are likely to experience stress when they occur. On the other hand, people with a high tolerance of ambiguity tend to desire

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ambiguous situations, finding them challenging but interesting [24]. (5) Self-esteem: refers to a person's belief of self-worth. In psychology, people with high self-esteem are identified as feeling happier about life [14,25] and likely to have better performance [14,26]. Whereas, people with low self-esteem are doomed to negative feelings and have high tendency to display detrimental behavior [27]. Innovativeness: can mean an individual's spirit which drives them to find new and better ways of doing things. In the Entrepreneurship world and in other related fields the concept comes from "innovation". The latter has been defined as the art of improving business processes, products and market distributions [1], in organizations, innovation refers to the development and implementation of new ideas [28]. However, this concise definition by Jackson and Manual [29]. "A tendency to be creative in thought and action" seems even more appropriate to this study.

It should be noted that not all people who score high on the above discussed characteristics would become entrepreneurs, nor all people who become entrepreneurs necessarily score high on them. However, entrepreneurs with high/moderate levels of psychological entrepreneurial characteristics are likely to be successful [12]. Likewise, employees who possess those characteristics are believed to behave entrepreneurially in their organizations and hence have high probability to attain high performance [13]. Thus, we suggest that entrepreneurial characteristics are worth being developed and encouraged in people (especially young ones) regardless of the career path they may take in life. To emphasize, young people tend to learn new skills or acquire new behavior easier than old people.

Psychological need satisfaction theoretical framework

According to SDT, human beings are born with three psychological needs namely competence, Autonomy and Relatedness that once they are satisfied, catalyze people to be intrinsically motivated and goal-oriented [30]. Need for autonomy: feeling of self-initiation as opposed to pressured or coerced feeling [31], need for competence: competence need satisfaction refers to the feeling of self-effectiveness as opposed to the feeling of passiveness and helplessness; need for relatedness: has to do with the extent to which a person perceive the love and care from people close to her/him [25]. The satisfaction of the mentioned three needs has positive effect to individual's self-growth and well-being whereas lack or insufficient of them result into low motivation feeling and may even lead to mental illness [30]. Consequently, people who live in need supportive environment experience need satisfaction and hence, benefit growth and wellness whereas people who live in need thwarting environment experience need frustration and hence likely to experience malfunction and ill-being [32].

The connection between psychological need satisfaction and entrepreneurship

Although there seem to be no many studies where self-determination theory has been directly applied in the field of entrepreneurship, this theory has considerable contribution in behavioral disciplines which directly or indirectly could be linked to entrepreneurship behavior. In education for instance, studies have revealed that the concept of psychological need satisfaction plays a paramount role in students' motivation for learning and academic performance [33]. Students who felt controlled and pressured by their teachers tended to be less intrinsically motivated in classroom and were likely to perform less on their subjects [34], whereas, those who perceived high level of autonomy were intrinsically motivated and performed well on their school activities [35]. Furrer and Skinner [36] investigated the influence of perceived relatedness on 3rd to 6th grade students and its impact on

their academic engagement and performance. They found that the high perception of relatedness was associated with positive attitudes towards school activities, less negative emotions and good academic performance, whereas the low perception scores was associated with negative emotions (including a sense of rejection, frustration, boredom and alienation) and poor performance. Also, the satisfaction of the psychological basic needs has been demonstrated to have a positive effect to employees' motivation for work performance [17] and their job satisfaction [37].

Arguably, there are limited studies concerning the direct impact of psychological needs satisfaction on the development of entrepreneurial behavior and entrepreneurship actions. However, some studies have investigated the topic indirectly. For instance, some traits of entrepreneurship personality profile like need for achievement [38], self-confidence and locus of control [39] have been found to be linked with authoritative parenting. The latter refers to the parenting style where parents support and set rules for their children but at the same time accord them a certain level of autonomy [40] and such parenting has been evidenced to have a positive impact on development of entrepreneurial early competencies [41]. Conversely, people feel less self-esteem under need thwarting social context [30]. Consequently, they tend to pursue extrinsic goals which are mostly as result of need frustration and rarely give inner satisfaction [42]. Arguably, it would be rather difficult to develop psychological entrepreneurship characteristics under need frustration. Thus, we hypothesize that "for psychological traits of entrepreneurship to develop within a person, at least moderate satisfaction of competence, autonomy and relatedness should be attained".

H1a: Autonomy satisfaction is positively associated with entrepreneurship personality profile

H1b: Competence satisfaction is positively associated with entrepreneurship personality profile

H1c: Relatedness satisfaction is positively associated with entrepreneurship personality profile

The relevance of self-determination theory to entrepreneurship behavior and entrepreneurial intentions is rooted into the concept of intrinsic motivation. According to SDT, an individual's intrinsic motivation results from the satisfaction of three important human psychological needs: autonomy, competence and relatedness [30]. Therefore, since entrepreneurship is embedded from perceived desirability and perceived behavior control [20], psychological need satisfaction especially high perception of competence and autonomy would increase entrepreneurial self-efficacy and hence, entrepreneurial intention.

H2a: Autonomy satisfaction is positively associated with entrepreneurial intention

H2b: Competence satisfaction is positively associated with entrepreneurial intention

H2c: Relatedness satisfaction is positively associated with entrepreneurial intention

H3: Entrepreneurship profile is positively associated with entrepreneurship intention.

Methodology

Data was collected through questionnaire survey. A questionnaire was translated into Chinese and was emailed to several teachers in

four universities in Hefei, China. Separate letters were emailed to the teachers asking their assistance in motivating the students to fill out the questionnaire. Some of these teachers were doing PhD program in the same university with the researcher, which made it easier to approach them. Students were given 20 minutes to fill the questionnaires in their classrooms and later teachers collected the filled-out questionnaires and mailed to the author respectively. Participants were third and fourth year undergraduate students from technology and engineering majors. The reason to choose this sample is based on researcher observation. China is an emerging market where entrepreneurship in high-tech industry is advancing and a big number of young adults are obsessive to venture in high-tech industry either through joining big companies or starting their own business. To succeed in this sector requires strong entrepreneurship personality because of tremendous increase of competition in the market.

Measurement

Unless indicated otherwise, variables were measured on 5-likert scale, 1 standing for total disagreement and 5 for total agreement. Dependent variable 1: Entrepreneurship personality profile: An entrepreneurship personality profile was defined as the average of six psychological characteristics (namely, innovativeness, need for achievement, internal locus of control, self-esteem, propensity to take risk and ambiguity tolerance,) that are assumed to predict an individual’s entrepreneurial behavior and entrepreneurship career inclination. We hypothesized that the likelihood of behaving entrepreneurially will depend on the individual’s score on these six characteristics. That is, on a 5-likert scale, a person with high entrepreneurship profile would score 5 points whereas a person with tendency to behave less entrepreneurially would score 1. Psychological characteristics of entrepreneurship were assessed using a questionnaire developed and validated by Chye Koh [10]. We removed six items which show low consistency to our study and we used the remaining 30 items. Innovativeness was measured on 4 items, internal locus of control on 7 items, need for achievement on 5 items, risk taking on 5 items, self-confidence on 3 items, and ambiguity tolerance on 6 items. Then, all the six constructs were averaged to form a single variable, namely entrepreneurship personality profile.

Dependent variable 2: Entrepreneurship Intentionality: Entrepreneurship intentionality was measured using 5 items taken from entrepreneurship intention questionnaire developed by Liñán et al. [43]. Respondents were asked to what extent they were convinced that they will create their own business in future. Those who have a dream of being self-employed somewhere in their life were considered to have high entrepreneurial intention whereas those who did not consider self-employment as their dream career were considered to have lower entrepreneurial intention.

Independent variables

Competence satisfaction, autonomy satisfaction and relatedness

satisfaction were measured using a Chinese version of a questionnaire instrument directly taken from: (<http://selfdeterminationtheory.org/basic-psychological-needs-scale/>) as it was developed and validated by Chen et al. [44]. The scale has been translated in various languages including Chinese. The whole scale is composed 24 items, 12 intended to measure need satisfaction and other 12 to measure need frustration. However, considering the high number of items in measuring our dependent variables, we decided to only use 12 items intended to measure need satisfaction in our study. Thereby, 4 items to test the satisfaction of each psychological need: autonomy, competence and relatedness.

Results

Respondents were composed of 304 males and 103 females. 98.50% of respondents were between 18-24 years old and only 1.50% of respondents were above 24 years old. Data analysis was firstly approached by calculating bivariate correlation among all variables involved in the study (Table 1). As shown in inter-correlation among variables (Table 1), all three components of psychological need satisfaction positively correlated with entrepreneurship personality profile as predicted; notably autonomy satisfaction ($r=0.57, p<0.01$); competence satisfaction ($r=0.53, p<0.01$) and relatedness satisfaction ($r=0.53, <0.01$). Also, entrepreneurship personality profile highly correlated with entrepreneurial intentionality as predicted ($r=0.81, <0.01$). The correlation between gender and relatedness satisfaction was significantly negative ($r=-0.11, p<0.05$). Age did not show any significant correlation.

We run independent t-test to find the explanation behind the negative correlation found between gender and relatedness satisfaction. The results of equal variances not assumed t-test statistic showed that there was a significant difference between female and male in their satisfaction of relatedness, $t(df=241)=2.56, p<0.05$. The mean values indicates that relatedness satisfaction was higher among females ($M=4.23$) than in males ($M=3.89$)

N: 407 students, all coefficients are significant at $p<0.001$ level. R^2 is shown in blue color.

Then, we conducted a structural equation modeling using AMOS software to test our hypotheses. The first path analysis predicted the influence of three psychological need satisfactions: autonomy, competence and relatedness on entrepreneurship personality profile of participants. The second path analysis predicted the direct influence of the three psychological needs on entrepreneurial intention. The last path analysis predicted the effect of entrepreneurship personality profile on entrepreneurial intention

The results are presented in Figure 1. As hypothesized, we found that all the three independent variables were significant predictors of entrepreneurship personality profile. Both autonomy satisfaction and competence satisfaction had same standardized coefficients: $\beta=0.38$,

Variable name	M	SD	1	2	3	4	5
Gender	1.75	0.44	-				
Autonomy satisfaction	4.07	1.53	-0.002	-			
Competence satisfaction	4.23	1.35	-0.016	0.208**	-		
Relatedness satisfaction	3.96	1.45	-.109*	0.378**	0.245**	-	
Entrepreneurship personality	4.21	0.73	-0.032	0.573**	0.532**	0.529**	-
Entrepreneurial intention	3.78	1.6	-0.027	0.572**	0.442**	0.423**	0.810**

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

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

Table 1: Correlations among variables. N=407.

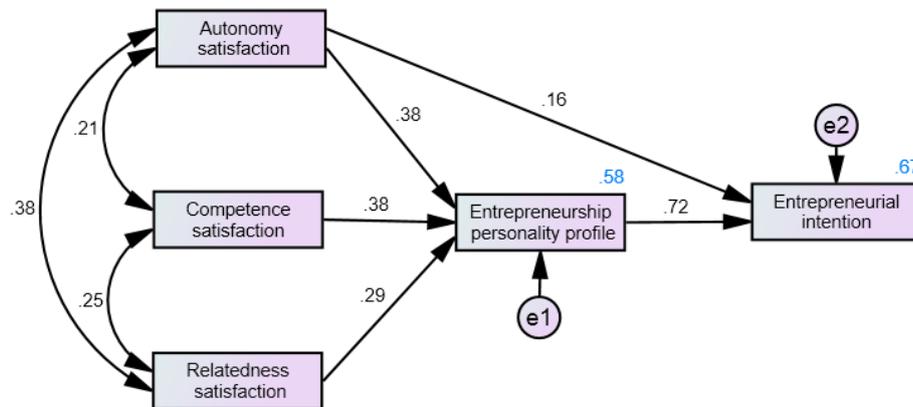


Figure 1: Results of a model predicting entrepreneurship personality profile and entrepreneurial intention.

$p < 0.001$; relatedness satisfaction: $\beta = 0.29$, $p < 0.001$. The covariances between the three predictors are positively significant (0.38 between autonomy satisfaction and relatedness satisfaction; 0.21 between autonomy satisfaction and competence satisfaction and 0.25 between relatedness satisfaction and competence satisfaction). Entrepreneurship personality profile highly predicted entrepreneurial intention among respondents $\beta = 0.72$, $p < 0.001$. The modification indices suggested the changes in the model and those changes were taken into account. The arrows from competence and relatedness to entrepreneurial intention were removed and the model was re-estimated (Figure 1). The overall model was a good fit with $\chi^2(N=407, df=2)=1.838$, $p=0.399$ normed fit index (NFI)=0.998; RFI=0.990; comparative fit index (CFI)=1.00; root mean square error of approximation (RAMSEA)=0.000. While autonomy satisfaction was positively correlated with entrepreneurial intention $\beta = 0.16$, $p < 0.001$, respectively, competence and relatedness satisfaction did not have a significant direct effect on entrepreneurial intention. This result partly confirms our second hypothesis. The squared multiple correlations show that 58% variance of entrepreneurship personality profile was explained by its predictors: autonomy satisfaction, competence satisfaction and relatedness satisfaction, whereas, 67% of entrepreneurial intention variance was explained by entrepreneurship personality profile.

Discussion

This study aimed at investigating the effect of psychological need satisfaction (competence, autonomy and relatedness) in predicting personality profile of entrepreneurship and how the latter in return, affect the entrepreneurial intentionality among young adults. The results revealed that higher perception of competence; autonomy and relatedness have a significant direct positive impact on development of entrepreneurship personality profile, those supported 1a-1c hypotheses. Autonomy satisfaction was the only psychological need which had a direct effect on entrepreneurial intention ($\beta = 0.16$, $p < 0.001$) and hence partially supported 2a hypothesis. Hypotheses 2b and 2c were not supported with the results where competence satisfaction and relatedness satisfaction did not show direct significant effect in prediction of entrepreneurial intention. The third hypothesis was substantially supported; high perception of entrepreneurial intention was to high extend explained by higher score on entrepreneurship personality profile ($\beta = 0.72$, $p < 0.001$).

To the best of authors' knowledge, this was the first study investigating psychological need satisfaction as a pre-determinant

of entrepreneurial intentionality. Previous studies on predictors of entrepreneurial behavior and entrepreneurial intentions had mainly limited their attention to social context as a source of behavior direction based on perceived social norms [20], entrepreneurship education [45] and role modeling [46]. Besides, the motivation to become entrepreneur has been mostly attached to drive outcomes like money [47] and independence [48]. This study proposes another perspective of research as far as the role of society in cultivating entrepreneurial behavior and stimulating entrepreneurial intentions is concerned. The role social context has in developing potential entrepreneurs through nurturing and catalyzing autonomy, competence and relatedness deserve further investigations. This is in consistency with what Holland identified as a second source through which people acquire entrepreneurial traits [49]. Apart from inborn characteristics (e.g., big five personality), people acquire other important traits associated with entrepreneurship as a result of their surrounding's reinforcement and support [49]. The latter has been identified by previous studies as a promising factor of potential entrepreneurship [41].

Therefore, we hope that this study will contribute on entrepreneurship researches, provoke discussions among scholars and stimulate more studies on the relationship between psychological need satisfaction and various aspects of entrepreneurship. For instance, future research could explore in depth the impact of psychological need satisfaction in stimulating individuals' entrepreneurial behavior and entrepreneurial intentions in different cultures. Also, longitudinal studies could investigate how psychological need satisfaction during childhood would affect individual's entrepreneurial behavior tendency during adulthood and the likelihood of becoming entrepreneurially oriented. Furthermore, it would be interesting to investigate how the satisfaction of autonomy, competence and relatedness as basic psychological needs influence entrepreneur's decisions during the whole venturing journey. Several questions rose from this research and need yet to be answered. Do some potential entrepreneurs fail to act on their entrepreneurial dreams due to psychological need frustration? Does need satisfaction moderate entrepreneur's level of commitment and persistence? More importantly, further studies using different samples are needed before this study findings can be generalized to the larger population. We note also that the number of male respondents was triple the number of female in our sample; we did not however explore all possible effects of gender differences in this study, future researches are encouraged to overcome that shortcoming.

This study raises some important implications in entrepreneurship

practice. Given its irreplaceable role in generating economic revenues and creating employment, entrepreneurship is to be encouraged. However, in order to remarkably benefit from the change it brings, entrepreneurship has to be valued in its quality rather than quantity. For sustainable quality entrepreneurship to take place within a society there is a need for entrepreneurial culture cultivation [15]. This study suggests that psychological need satisfaction constitutes a major input in entrepreneurial behavior development which is the foundation of qualitative type of entrepreneurship that should be advocated. Instead of pushing people to pursue entrepreneurship out of necessity, countries especially developing ones, should empower its citizens to think and act entrepreneurially and for that to happen, the satisfaction of autonomy, competence and relatedness should be attained at least at moderate level. For psychological need satisfaction to take its course within individual, it should be invested at a very young age. Therefore, the concerned stakeholders including educationalists, policy makers and parents could work together to set up mechanisms through which children are accorded some level of autonomy, facilitated to excel at their competencies and at the same time feel related. For example, students could be encouraged to choose subjects related to their abilities and their own career dreams. By doing so, young people could excel in the subjects they like and therefore, the more chance to have entrepreneurship based interest, the one that would last. Parents could also be educated about the importance of supporting their children to pursue their dreams at a very young age.

Besides, since the so called psychological characteristics of entrepreneurship, notably locus of control, innovation, need for achievement, self-esteem, propensity to take risk and tolerance of ambiguity are not only beneficial to entrepreneurship career, but also to other careers, they should be encouraged and nurtured in young people regardless the career path. When people feel reasonably satisfied with their psychological needs, they are likely to explore their interests [30]. Thus, the more autonomous, competitive and related individuals feel the more likely they would act on their entrepreneurial intentions. Social context where psychological need satisfaction is valued, people especially young adults would be likely to develop entrepreneurship personality profile and hence high chance to have entrepreneurial intentionality.

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